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A DIFFICULTY WITH AMERICAN CENSUS-
TAKING.

Thesis.—Statistical statements of absolute amount or of rate, based upon records not made until the end of the period to which the statements apply, are likely to be only a minimum limit of the truth, and to depart from the truth by a variable, and usually an indeterminate, amount.

Governmental work in statistics is not unlike the keeping of accounts by a private firm or corporation. Private accounting falls into two main branches: first, the regular *book-keeping*, which records the flow of goods, money, or obligations between the company and those with whom it deals; and, secondly, the periodic *taking of stock*, which portrays the condition of the business at a single instant. To keep hold on the details of a business, both sources of information must be employed, each being a supplement and a check to the other. So a highly organized government maintains *registration* reports, which record the current of people, products, or acts deemed worthy of entry, and

census reports, which aim to photograph the condition of a people for an instant, then leaving it till the next sitting is ordered.* Each of these two sources of information is needful; neither is a satisfactory substitute for the other; and the best results are secured only when the two work together, like the right and left hands. Yet some countries, such as Russia until 1897 and Japan and Roumania to this day, have only registration records, but no census; and the United States, whose census is in some respects more highly developed and far-reaching than that of any other civilized country, has scanty and imperfect registration records.

The lack of a national registration system in the United States, while under our form of government perhaps an inevitable result of the relegation of care for the health, and of legislation regarding marriage and the family, to State or local control, has resulted in efforts to secure by means of our national census the sort of information for which registration is peculiarly adapted. These efforts have met with imperfect success. A review of the results in several fields will be the most effective means of elucidating the difficulty with which this article is concerned.

Death-rate.—The method which the Census Office has been compelled to follow in approximating the total number of deaths in the country during the census year—that is, the twelve months preceding the date of the census—has been to instruct the enumerators, in making their rounds, to ask at every dwelling visited, “Has any death occurred in this family during the census year?” The outcome of this method has been unsatisfactory. The number of deaths obtained has fallen so far below the number which occurred in the country as to make the results of

*The difference resembles that drawn in political economy between income as a flow and capital as a fund. In a census, as with capital, abstraction is made of the element of time; while in registration, as with income, time is of the essence of the notion.

little scientific value. Even during the last month of the census year — that is, the first month preceding the census day — the omissions were probably from 5 to 10 per cent. of the total; and with the lengthening of the period between the event and its recording by the enumerator, the proportion of omission increases, and for the second month of the census year was probably about 40 per cent.* The Census Office has been uniformly frank in admitting the shortcomings of its mortality returns, as is indicated by the following quotations: —

"The tables of the census which undertake to give the total number of births, marriages, and deaths in the year preceding the first of June, 1850, can be said to have but very little value. . . . People will not or cannot remember and report to the census-taker the number of such events, and the particulars of them, which have happened in the period of a whole year to eighteen months prior to the time of his calling." †

"Neither in 1850 nor in 1860 was the entire mortality of any State ascertained and reported, nor was even such an approximation obtained as will permit any reliable calculation to be made of the rate of mortality." ‡

"At no one of the three censuses taken under the Act of March 23, 1850, has the aggregate number of deaths returned by the assistant marshals risen above two-thirds of the number of deaths probably occurring during the year of enumeration." §

"The results of each of the four censuses in which an attempt has been made to ascertain the number of persons who died in the United States during the preceding year have shown that the enumerators did not obtain and record more than 60 to 70 per cent. of the actual number of deaths." ||

"The death-rate based upon the enumerators' returns, 10.86, . . . cannot be considered as representing the true death-rate in the area covered thereby. It is only presented as indicating the serious deficiency in the enumerators' returns." ¶

* *Tenth Census*, 1880, vol. xi. p. xlii, table 18.

† *Seventh Census*, 1850, p. xxxix.

‡ *Eighth Census*, 1860, *Mortality and Miscellaneous Statistics*, p. xxv.

§ *Ninth Census*, 1870, *Vital Statistics*, p. ix.

|| *Tenth Census*, 1880, vol. xi. p. xi.

¶ *Eleventh Census*, 1890, *Abstract*, p. 264.

The returns of deaths by enumerators for the Twelfth Census will be more full and complete than before, because each enumerator, except those on *per diem* pay, will receive five cents for each death reported, while in 1890 he received but two cents. This additional pay may also evoke a certain number of fraudulent returns, some of which may escape the scrutiny and tests of the central office. Whether they exist and make a perceptible proportion of the total number cannot be decided in advance, if at all.

The returns of deaths used in previous American censuses have been obtained from three sources,—the memories of the persons replying, the records of physicians with whom correspondence has been conducted, and the records of States and cities having registration records. These may be grouped as memory, private records, and public records, and are progressively more trustworthy in the order given. The death-rates derived from enumerators' returns are so inaccurate that it is doubtful whether they will be computed for the Twelfth Census. In this department of census work, therefore, the thesis stated at the beginning of the article is admitted by all competent students.

Birth-rate.—Effort to ascertain the birth-rate through the census might be made in the same way that the death-rate is sought; *i.e.*, by asking at every dwelling, "Has any birth occurred in this family during the census year?" But the method actually followed is to enumerate all the children under one year. It is assumed that they were all born in this country, and to these are added all children who were reported as having been born and having died both within the census year. The result is an approximation to the total births during the census year. It will be noticed that only the second of these two steps is open to the objection implied in my thesis. That this way of reaching a conclusion regarding the birth-rate of the United States leads to doubtful results is sufficiently

shown by the fact that perhaps the two highest authorities in this field have reached opposite conclusions on the vital question whether the birth-rate in the United States decreased between 1880 and 1890.* As the arguments which have been employed by these experts will illustrate the difficulty inherent in our census methods, they deserve examination in some detail.

Dr. Billings called attention to the decreased ratios of children under one and under five to the total population and, in the cases available when the article was written, the decreased ratios to the women between fifteen and fifty. This might be due either to greater omissions in the counting of children in 1890 or to a decline in the birth-rate. The former explanation, except for the Southern negroes, was rejected by Dr. Billings, and the latter accepted.

Mr. King made a careful and thorough comparison between the census figures for Massachusetts in 1890 and the results of registration in that State during the preceding five years, assumed that the registration records were more accurate than the census figures,† and concluded that probably 25 per cent. of the children under one and over

* "It appears to me that we are justified in concluding that the birth-rate has really diminished in the United States." J. S. Billings, "The Diminishing Birth-rate in the United States," *Forum*, June, 1893. "The conclusions indicate that with a correct enumeration the seeming decrease in the birth-rate would disappear." W. A. King, "The Decrease in the Proportion of Children," *Political Science Quarterly*, December, 1897, p. 620.

† This assumption — namely, "The registration data with which the census figures are compared must be admitted to be more accurate than any enumeration of the population can be made under the present system" (*loc. cit.*) — seems to be open to discussion. Registration in England and Wales is probably quite as accurate as in Massachusetts, but in that country the contrary assumption is made; and, in constructing the Graduated Table of estimated population at each year of age, the registration returns are corrected into harmony with the census figures. From the office of the Registrar-general in London, I am informed, "there is no reason to suppose that any appreciable number either of children under five years of age or of persons of other ages escape enumeration at the English Census." In the text of the English Census, however, it is estimated that rather less than 2 per. cent. of the children under five are erroneously reported as over five. *Census of England and Wales, 1891, General Report*, pp. 28, 105.

15 per cent. of the children under five, escaped enumeration at the Eleventh Census. From a similar line of argument he concluded that probably 5 per cent. of the children under one, and nearly 3 per cent. of the children under five, escaped enumeration at the Tenth Census. Such a chain of reasoning, if accepted, would probably weigh with almost equal force against the various State censuses, which in Massachusetts and Rhode Island are at least as accurate as the Federal Census; and the position would ultimately become this,—that any census is less accurate than registration.

It is not unlikely that the differences between those two experts may be reconciled and the truth of an intermediate position established by noticing that the form of the age question in 1880 was "age at last birthday," but in 1890 it was "age at nearest birthday." In both years the ages of all children under one were to be reported in months. If these questions were answered as asked, the persons reported as under five in 1890 were only those who were under four years and six months. This cannot be assumed to be true, but the hypothesis that an appreciable number answered the question according to its terms deserves to be tested. Under the instructions issued, the persons one year old in 1890 included only those between twelve and eighteen months, while in 1880 it included those between twelve and twenty-four months. A sharp decrease in the proportion of children reported as one year of age, between 1880 and 1890, would therefore be evidence that in many cases the question was answered as asked. Of all the children under five at any date, probably rather over one-fifth are between one and two years of age, since an early year in any age group has a somewhat larger number than a later year. But in the early years of life there is a tendency to report children older than they are.*

* Farr, *Vital Statistics*, p. 206; *Census of England and Wales*, 1891, General Report, p. 27.

Children under twelve months are often reported as one year old, because they are in their first year; and children between twelve and twenty-four months as two, because in their second year. This source of error results in the number of persons reported as under twelve months and the number reported as between twelve and twenty-four months being less than the truth. Thus in 1880 only 21 per cent. of the children under five were reported as under one year of age, and only 18 per cent. as one, while the true percentage for under one was over 22, and for one was over 20.* In 1890, therefore, one might assume that, had the question been unchanged, the ratio of children reported as one year of age to the total under five would have been about 18 per cent. But the instructions issued to enumerators in 1890 were far more specific and emphatic than they had been previously in requiring the age to be returned accurately; and, as a whole, the age returns in 1890 are much more correct than in 1880.† Hence, if no new source of error had entered in 1890, we may assume that the ratio of children returned as one year of age to the total under five would have been perhaps 18½ or 19 per cent.‡ In fact, as shown by a preceding foot-note, it was 14 per cent.; and this sharp decrease from the percentage in 1880 is probably an evidence and a measure of the influence that the changed

* The following table gives the distribution of the children under five to the single years, as shown in English Life Table No. 3, and as reported in the American censuses of 1880 and 1890:—

Age	Per cent. of total children under five at each year of age by		
	English Life Table No. 3.	U.S. Census of 1880.	U.S. Census of 1890.
Under 1	22.55	20.94	20.52
Under 2	20.44	18.16	14.11
Under 3	19.52	20.64	22.66
Under 4	18.94	19.98	21.37
Under 5	18.55	20.26	21.94
Total	100.00	100.00	100.00

† *Publications American Statistical Association*, vol. v. p. 133.

‡ By the English Census of 1841 it was 20.4 per cent.

form of the age question exercised upon the enumerators' returns. Confirmation of the hypothesis is derived from the fact that the decrease between 1880 and 1890 in the proportion of persons reported as one year of age was more marked in the Northern States than in the Southern. Various bits of evidence, external and internal, warrant the conclusion that the census was taken more accurately in the North than in the South; and the change in the form of the age question would, therefore, be more regarded by enumerators and the public in the North. Furthermore, the difference, here ascribed to the change in the form of the age question, was slightly greater among the Southern whites than among the Southern negroes. This tends to confirm the explanation here suggested, and indicates further that the change in the form of the age question affected not merely the enumerators, but also the public. It seems, therefore, impossible, on the one hand, to accept Mr. King's contention that the decrease in the birth-rate between 1880 and 1890 was merely apparent, and not real, and, on the other hand, to accept the conclusion of Dr. Billings that the decrease in the birth-rate in the United States was greater than in any of the eleven countries in western Europe, with which comparison is made. There was probably a sharp and almost universal decrease in the birth-rate between 1880 and 1890,—a decrease which affected especially the negroes, and to a somewhat less degree the Southern whites; but the actual amount of this decrease was less than the apparent amount owing to the change in the form of the age question, and it is impossible now to determine what proportion of the decrease was actual and what proportion was merely apparent.

But in any case this method of computing the birth-rate is open to serious error, because of the certainty that many children born and dying within the census year escape enumeration, and also because of the tendency to

report the ages of children as greater than they are. The latter tendency to error may be reduced to a minimum by carefully smoothing the curve of reported ages before beginning any computation; but the former cannot be successfully eliminated.

Marriage-rate.—The census enumerator has asked at the last two censuses, and with slightly changed language will ask at the present census, whether the person, if married, was married during the census year. I believe the answers to this question have never been tabulated and published; but, in the light of the difficulties which have been met in determining the death-rate from answers to a similar question, it may well be doubted whether the figures could ever be used as a basis for ascertaining the marriage-rate of the country, or of any part of it.

The precise question asked at the Twelfth Census will be, number of years married. To compute the marriage-rate from the answers would be like computing the birth-rate from the answers to the question, age at last birthday, or number of years lived; and the objections implied in my thesis clearly hold against any such method, because it ignores all cases in which the marriage had begun and had ended by death or otherwise within the census year, and hence could give only a minimum limit to the true marriage-rate.

Divorce-rate.—All persons are asked at each census to report their marital condition on the census day as either single, married, widowed, or divorced. Many persons who are divorced will not admit it to the enumerator. Many who answer regarding other persons in the census family* are ignorant of their real marital condition. Yet, even if all divorced persons were returned as such, the figures would afford almost no basis for an inference regarding the divorce-rate for the year preceding, and, I

*This includes a boarding-house, hotel, or institution, as well as a family in its ordinary sense.

believe, have never been used for that purpose. The proportion of divorced persons in the community on any single day might remain decade after decade the same; and yet, in case remarriage after divorce were to become more general, the divorce-rate might be rapidly increasing. On the whole, the census returns of divorced persons are of little value.

An attempt has been made by the Department of Labor under orders of Congress to reach the divorce-rate of the United States by compiling the judicial returns of divorce decrees.* These recorded decrees belong to the class of registration records, and in several of the States are published in the State registration reports. The attempt of the Federal government, therefore, being based upon contemporary written records, was far more significant and valuable than the work of the census. But minor errors were inevitable because of the fact that the inquiry extended over the judicial records of each county for the preceding twenty years. During that time the divorce records in ninety-eight counties had been injured or destroyed, and this cause of error made the apparent increase of the divorce-rate perhaps 2 per cent. greater than the actual increase. Probably also court records came to be kept somewhat more carefully, and there was less chance for a divorce decree to escape record at the end than at the beginning of the period.

Crime-rate.—In seeking information about matters often or usually entailing social disapproval, of which divorce and crime are examples, it is inexpedient to ask of each family whether any divorce has been decreed to, or any crime committed by, a member of the family during the census year. In the case of crime, therefore, a substitute for asking the question of each family has been sought in gathering the statistics of persons in prison on the census day.

* *Report on Marriage and Divorce in the United States, 1867 to 1886.*

The word "crime" is so vague, and its definition varies so with place and period, that it would be more exact to break it up into various species, and speak of a murder-rate, a forgery-rate, and the like. But one may grant that, for short periods of time and in the same region, the generic word "crime" usually covers about the same species of crimes in about the same proportions. One may perhaps grant, also, that the ratio of crime detected and punished by imprisonment to the number of crimes committed does not vary widely or suddenly. Nevertheless, the method of computing the crime-rate from the number of persons reported as in prison on the census day is almost as unsatisfactory as would be the method of computing the immigration-rate from the number of persons born abroad and reported in the country on the census day. The main difference between the two cases is that the country has no registration of crimes detected and punished, no judicial statistics; but it has registration records of immigration, which, even in their imperfect condition, are so much better for the purpose than the census figures that the latter have not been utilized as a basis for computing an immigration-rate. The leading experts in the country to-day admit the impossibility of determining from census figures even the most vital question in this field, Is crime in the United States increasing or decreasing? * In the whole field of population statistics, therefore, the careful and intelligent efforts of officials and private students to wring, from figures recorded for the first time in the census, information about rates for which such figures are not adapted, have ended in substantial failure.

Industrial statistics.—In this field the difficulty is probably not so weighty, and certainly has not been so clearly recognized. Yet I believe it to exist, and to be important

* See R. P. Falkner, "Crime and the Census," in *Annals of the American Academy of Political and Social Science*, January, 1897.

enough to deserve careful consideration. The inquiries on the industrial schedules of the census relate partly to a certain day, either the census day or the last day of the business year reported, and partly to the last crop year or business year. Only to questions of the latter class could the difficulties suggested in my thesis apply. But, still further, the manufacturing schedule for the Twelfth Census contains the instruction, "Amounts and values must be obtained from book accounts, if such accounts are available"; and the agricultural schedule declares, "In the absence of book accounts, careful estimates must be given." These book accounts, containing entries made shortly after the occurrences which they record, are of the nature of private registration reports. So far as the manufacturing or agricultural returns are derived from such sources, they are entitled to somewhat the same confidence as the death records of the census copied from State or municipal registers.

Decade by decade a larger proportion of the business industries of the country reported in the manufacturing returns probably can and do answer the questions on the schedule from book accounts. Such returns in becoming more accurate tend to become more complete, for errors of memory are likely to be errors on the side of omission. Hence, entirely aside from any improvement in the efficiency of the census work, the tendency of such changes in book-keeping would be to exaggerate the rate of growth in the manufacturing industry of the country.

It seems impossible to say, otherwise than as a result of personal observation and judgment, whether book-keeping among farmers is extending decade by decade, and therefore whether the answers on the agricultural schedules are more generally derived from book accounts. The best expert opinion available, however, is that such a change is in progress, but with much slowness. Not a little understatement of the agricultural returns of the country, fre-

quently charged against the census figures, assuming such understatement to exist, may plausibly be assigned to errors of omission in the returns based upon memory alone.

If the thesis with which this paper opens be deemed established, the question is inevitable, What of it? How may the present conditions be improved?

In the field of population statistics, with which we have been especially concerned, a suggestion has been made for turning the census officials in selected localities into registration officials, whose duty it should be to record all deaths in their districts during the census year. This method seems to me open to grave constitutional and administrative objections and to be, therefore, inadmissible.* A census office in the United States, under our Federal system, cannot be made into a registration office, authorized to record births, marriages, and deaths within the limit of the States, without doing violence to our system of government or being so powerless as to accomplish little or nothing. If one desired a national registration system, the way to it through a Constitutional amendment is perhaps available; but I do not believe it can be secured in any other way.

If that method seems hopeless, the gradual extension of state and municipal registration may be regarded as a solution. To one familiar with the little value and slow growth of these systems in much of the country, this solution also seems remote and improbable.

The only other alternative open is for the United States government to build up a system of voluntary and continuous co-operation between the local registration

*The student interested in the discussion of the subject is referred to the following articles: by Dr. C. L. Wilbur, "Outlook for a General System of Registration," in *American Public Health Association, Reports and Papers*, vol. xxi, p. 231 (1896); "Vital Statistics for the Twelfth Census," *Publications of American Statistical Association*, vol. v, p. 188; "A Note of Correction," *Publi-*

offices and itself. This seems to me a possibility which may be realized in the near future; but its realization is intimately interwoven with the future of the Census Office. Until that or some similar office shall become permanent, such co-operation is almost impracticable. When a permanent census office is demanded merely as the best means for taking the decennial census successfully and economically, the plea for such an office is weakened by narrowness of view. A census may be taken as now by a temporary office; but no census can do the work of a registration office, and a census not supplemented by registration loses, at least in the field of population statistics, more than half its scientific value. For, aside from the administrative ends subserved by a census of population, its main scientific goal is to furnish a broad basis for registration. A census which does not blossom in registration is almost as sterile as capital which does not blossom in income.

In the schedules for industrial statistics it would certainly aid the student to have the question introduced, "Are these figures derived from book accounts?" If it were practicable to introduce the question and tabulate the answers, a distinction might be drawn in these fields of census work, similar to that established in the division of Vital Statistics, between the returns based upon contemporary written records and the returns based upon the memory of the persons reporting. Such a distinction would be of theoretical importance. It might furnish some clew to the margin of error to be attributed to the industrial figures of each census. It seems not unlikely that answers to such a question would enable a line to be drawn, at least approximately, between the factory produc-

tions of American Statistical Association, vol. vi. p. 311; "Representative Mortality Statistics," in *American Public Health Association, Reports and Papers*, vol. xiv. p. 368. The objections to this plan, which I stated in commenting upon the writer's first paper in the *Publications of the Statistical Association*, seem to lie with equal force, I regret to say, against the later statement of it.

tion of the country, properly speaking, and the production of the hand-trades in shop work and in household industries. While Congress calls for returns of the latter class, every competent student knows that it is impossible to get them adequately, both because much of the work is not localized in any "establishment," and also because the returns regarding such work must usually be based on memory.

Even if neither of these suggestions proves fruitful, it may aid the student to have a difficulty, which seems to me fundamental, pointed out and the range of its application determined.

If the main thesis be granted, the following subordinate theses could probably be demonstrated, some of them almost as corollaries.

1. The United States as a whole has no means of deciding with certainty upon the healthfulness of the country at different times or in different parts or the healthfulness of different occupations.

2. Few States and cities have such means; and, on the whole, the increase in the number or efficiency of such local agencies is slow and slight.

3. Neither the United States as a whole nor any of its parts has the means of deciding with certainty upon the rate of natural increase by excess of births in any locality or in any class, like the foreign-born, negro, or urban population.

4. There is no sound means of determining the relation of the country as a whole or of most of its parts or any of its social classes to the institution of marriage, the age at which marriage occurs, the proportion of the several classes marrying, the duration of the union, and the like.

5. The country has no regular agency for giving similar information about divorce. But, as divorce decrees are now a matter of judicial record, the difficulties in this field are less than in any other.

6. The country has no trustworthy means for ascertaining whether crime in the United States, or any specific kind of crime, such as drunkenness, forgery, or rape, is increasing or decreasing.

7. The only feasible means of securing these ends in the near future is through a close and continuous co-operation between state or municipal registration offices and some statistical department of the Federal government.

8. Such a statistical department must be permanent; and, therefore, the *sine qua non* of securing these ends is a permanent statistical office at Washington, empowered to work towards them.

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THE IRON INDUSTRY IN THE UNITED STATES.

II.

THE WORKING OF PROTECTION.

THE argument for protection to young industries has been little heard of late years in the protective controversy. The opponents of protection assail it with ridicule. The protectionists themselves are chary of referring to the huge enterprises of this generation as needing the props of infant endeavor. Fifty or a hundred years ago the case was different. Then many industries in the United States were obviously in the early stages of development. The established organization of business in other countries, and especially in England, their possession of unfamiliar machinery and processes, the acquired skill of the laborers, made it at least plausible to argue that here were formidable obstacles for new competitors; and yet obstacles which — given time and some temporary aid — were not insurmountable. Accordingly, the argument for protection to young industries was loudly and persistently urged, and ceased to be heard only as the rapid development of manufacturing industries made the word "young" less and less applicable to what seemed to be the plain facts of the situation.

And yet the same argument has continued to be presented, in terms nominally different, but in substance the same. We have not been told that protection should be accorded to young industries; but we have been told time and again that protection, while it may cause the price of an article to rise for a while, eventually leads to a reduction in its price. When such assertions are made, the free-trader of the uncompromising type asks at once, why should the domestic producer need aid if he can put his

commodity on the market as cheaply as the foreigner? The answer of the protectionist is that aid is needed only in the early stages. At the outset, it is said, the domestic producer cannot market as cheaply. He has much to learn; but the field is promising, and, given time and the spur of competition at home, he will in the end accomplish the object, and be able to meet the foreigner without fear or favor. Evidently, this is our old friend the plea for protection to young industries. It is assumed that there is a promising field. No deep-seated obstacles stand in the way of the successful prosecution of the new industry, and difficulties arise merely from lack of experience and acquired skill. Only if assumptions of this sort be made, can it be reasoned that protection is needed, and yet that prices will sooner or later be as low as those of the imported article.

These simple and familiar generalities have been set forth once more, because they bear on the extraordinary development of the iron industry in the United States during the last thirty years. The attentive reader of the campaign literature put forth by the American Iron and Steel Association must be struck by the change, in very recent years, in its mode of presenting the alleged effects of the protective duties. Formerly the practice of the astute managers of its protectionist propaganda was to set forth in a single column the fall in the domestic price of (say) steel rails before and after the imposition of the heavy duty of 1870. Sometimes simplicity was carried so far that for the period 1865-78 current American prices were quoted without even making corrections for the depreciation of the paper currency, bringing the high prices of that time into wonderful contrast with the reduced gold prices of later years. The present writer, when discussing the effects of the duty on steel rails some fifteen years ago, naturally resorted to the comparative method, and showed, in parallel columns, that the

American price in specie, fallen though it had, remained continuously and largely above the foreign price.* Of late, however, comparison of this sort, once studiously avoided, has been instituted with ostentation by the protectionists themselves. Their broadsides now state prices not only in the United States, but in Great Britain as well, and show that the prices of many forms of iron and steel have not only fallen in this country, but have fallen to the foreign level, sometimes even below the foreign level. This change in the comparative level of prices is a recent phenomenon; but it is the outcome of forces that have been in operation for several decades, and it calls for a fresh examination of the working of the protective system.

A glance at the figures in the appended tables † will show that since the year 1893 there have been no considerable differences between the prices of pig iron in Great Britain and in the United States. We may disregard for the present the course of prices during the year 1899: of this something more will be said presently. Looking at matters as they stood at the close of 1898, we find that for five years American prices were virtually the same as British, a trifle higher in the earlier part of this quinquennial period, a trifle lower in the later. Before 1893, on the contrary, British prices had been steadily lower,—sometimes very much lower, sometimes with moderate divergence, but always with a general level unmistakably beneath the American level. The same sort of change has appeared in the prices of steel billets and steel rails. Here, too, after a long period of higher prices, the American quotations fell to the British, and even below them. It will be recalled that it was in the decade 1880–90 that the greatest growth took place in the American iron industry. In 1890 the American output for the first time exceeded that in Great Britain. Domestic production has thus

* In the essay on *The History of the Present Tariff* (1885), since incorporated, with some revision, in the *Tariff History of the United States*.

† See the Appendix, p. 573.

mounted, domestic competition has lowered prices, and these prices have fallen not only absolutely, but relatively to those in competing countries. It may be fairly argued that the community has got its iron more abundantly and more cheaply than if it had relied on free importation. *Prima facie* the case of the protectionist is made out. Protection to young industries seems to have been successfully applied.

But, while the object of protection to young industries has been attained, it may remain a question whether it has been attained by means of that protection. The result may have been due to other causes, such as would have been at work in any event. The same forces might have come into operation without the stimulus from protective duties. Further, it may be a question whether the gain, even if due in some degree to protection, is worth the cost,—whether the incidental losses and disadvantages may not outweigh the gains and advantages. To answer these questions, a more searching analysis is necessary, and a more detailed consideration of the course of prices in both countries.

It will be of service to note at the outset what were the duties on pig iron during the period under consideration. In round figures they were \$7 per ton for the period from 1870 to 1894, and have been \$4 a ton since 1894. Some variations in the rates during the earlier period are set forth and explained below, but are of no great moment.* The

* Duties on Pig Iron.

(Per gross ton of 2,240 lbs.)

Act of July 14, 1870	\$7.00
Act of June 6, 1872	6.30
Act of March 3, 1875	7.00
Act of March 3, 1883	6.72
Act of October 1, 1890 ("McKinley")	6.72
Act of August 27, 1894 ("Wilson")	4.00
Act of July 24, 1897 ("Dingley")	4.00

The "war duty" on pig iron (1864) had been \$9 a ton, and was reduced to \$7 in 1870. The reduction in 1872 was part of the "horizontal" 10 per

duties on other forms of iron than pig iron, and especially on some steel products, are of much importance. But it will be convenient to confine the inquiry for the moment to the prices, production, and imports of pig iron, passing thereafter to such other parts of the industry as present phenomena different from those which appear in this fundamental branch.

The iron industry is peculiarly liable to the periodic fluctuations of modern industry. Indeed, it reflects in the extreme the alternations of activity and depression between which intervene the recurring commercial crises. The explanation of this special sensitiveness is not far to seek. The periodicity of the changes is closely associated with the variations in the spirit of investment. In so-called good times, new enterprises of all sorts are freely launched. In the succeeding periods of dulness, few such are undertaken. But investment and fresh ventures in our modern days mean the erection of plant, tools, and machines; and these mean iron and steel. When new and ever new railways formed the main outlet for the investment of the rapidly growing accumulations of savings, it was inevitable that their construction — rapid in the days of activity, slow and halting in those of depression — should cause periods now of insatiable demand for iron, then of glutted markets. Within the last decade or two the railway has become relatively less important in the investment of the new supplies of savings; but the development of the arts in other industries, the ever-growing use of iron and steel in buildings, ships, tools, and machinery of all kinds, have caused the oscillations in the iron trade to persist. Naturally, these phenomena are

cent. reduction on manufactured articles made in that year, and repealed in 1875. In the general revision of 1883 the duty on pig iron was stated in terms of so much per pound, — no longer per ton, — the figure being 3-10 cent per pound, or \$6.72 per gross ton. No change was made in the McKinley act of 1890; but in the Wilson "reform" act of 1894 the rate was lowered to \$4, and this was retained when the protective system was rehabilitated in 1897.

accentuated in the United States, where material progress is rapid beyond comparison, and where the investment of capital proceeds fast and feverishly. Hence we find that with every rising wave of enterprise and investment the price of iron rises, and its production mounts with sudden rapidity. Then comes the crisis: prices fall, production halts, and a period of depression follows, more or less long according as the conditions for revival appear sooner or later. Commonly, the iron industry feels a chill before the commercial storm breaks. A slackening in the launching of new enterprises naturally appears, as some among the enterprises already set up begin to weaken under the test of active operation. Hence the maximum production of iron and the highest range of prices for the cycle often come in the year immediately preceding the crash. In 1872-73, it is true, the largest production and the highest price came in the year of the crisis itself, in 1873. But, before the disturbances of 1884 and of 1893, a relaxation in the rate of output and the beginning of a fall in prices are seen in advance of the general overturn. In 1899 and in the first months of 1900 the industrial world was on the crest of a rising wave, with its familiar phenomena of increasing production and inflated prices, sure to be followed, so far as experience can guide us, by a period of slackened production and falling prices.

A glance again at the tables in the Appendix will show that during more than half of the period under consideration the imports of pig iron responded regularly to the increasing demands of the active periods, and fell as regularly during the dull times that followed. At the beginning of our period the domestic supply of iron needed to be regularly supplemented by the imports; and in the years 1871-72 there was simply a somewhat increased resort to a regular foreign supply. But, as the domestic product became larger, the imports became less and less important, and, except in the years of rising speculation and invest-

ment, virtually ceased. It is true that the custom-house returns show continuous and considerable imports throughout the period; but the figures might easily mislead. The imports classed as pig iron are in good part imports of special qualities, required for some particular use. Thus in the decade 1870-80, and even later, Scotch pig iron was imported in considerable quantities, being thought specially adapted for certain kinds of smooth castings, and so bought abroad in the face of a duty which advanced its price much beyond that of domestic iron. Of late years Southern iron has been found available for these purposes, and the importation of the Scotch brand has ceased. Similarly, spiegel-eisen and ferro-manganese — which are classed with the ordinary kinds of pig iron in the custom-house returns — are imported in varying quantities. These are used, in comparatively small amounts, solely for mixture with Bessemer pig in the last stages of the conversion of that iron into Bessemer steel, and are imported in fluctuating quantities, but with a gradually lessening dependence on the foreign supplies.* Setting aside these special imports, we are safe in saying that in the dull periods of 1875-78, and again in 1884-85, the imports practically ceased. On the other hand, they suddenly revived, and became of considerable volume in the active years 1879-82, and again in the year 1886-87. Since this latter period, however, they have ceased to come in, even during the periods of activity. The year 1890, when first the American iron product exceeded that of Great Britain, marks also the end of this spasmodic competition. With that year the revolution in the iron trade of the United States was virtually accomplished; and the new period was entered on, of whose characteristics some have

* The production of these special brands varies greatly, within the country and without, apparently from the sporadic and easily exhausted pockets of the peculiar ore. But the domestic production, on the whole, has been rapidly increasing. See the *Report of the American Iron and Steel Association for 1896*, p. 40.

already been noted, and of which others still need our attention.

It is clear from these facts that during the years of activity — 1872-73, 1879-82, 1886-87 — the price of iron in the United States was at the seaboard higher than the price in Great Britain by the full amount of the duty. The mere fact of importation suffices to prove this: the iron would not have come in over the duty unless the price had been high enough to make the sales profitable. At other times iron has not come in,— that is, only certain special qualities have come in; and the American price, while higher than the foreign, has not been higher by the full amount of the duty. The tables of prices amply verify these statements. In the busy years the difference between American and British prices is large enough to offset duty, freight, and other charges; and imports flow in. In dull years the margin shrinks; and imports cease, except for the special qualities. Until 1893 — that is, through much the greater part of the period we are considering — the American public has had to pay roundly, sometimes the full amount of the duty, sometimes less, but always a very substantial added price, for the eventual gains which may be credited to the protective system.

A precise measurement of this burden has sometimes been attempted. Following the simplest lines of orthodox reasoning, it has been argued that the total domestic production, multiplied by the rate of duty, would gauge accurately the added charge on the community.* The dangers of the hasty application of simple deductive reasoning could not be better illustrated than by the comparison of this version of the situation with the concrete facts. Had there been no duty on iron, the price at the seaboard would unquestionably have been lower than it was,— sometimes by the full amount of the duty, sometimes by less. The

* See the Appendix to D. A. Wells's *Recent Economic Changes*, pp. 469, 470.

price in the interior, say at Pittsburg, also would doubtless have had a somewhat lower range; but how much lower it is impossible to say. The freight charges from the seaboard would have impeded competition from imported iron, raising the price at which it could then be supplied. The iron output west of the Alleghanies was being made more and more cheaply and sold more and more cheaply, as the years went on; and any iron imported free of duty, while it might have caused prices to be lower, would at no time after 1882 or 1883 have caused a decline in the heart of the country by the full amount of the duty. Indeed, in the latter part of this decade — 1888 or 1889 — the price in this region was little higher, if at all, than that at which foreign iron could have been supplied, duty free. And, further, even admitting that domestic prices were much higher than foreign, it is probable that the removal of the duty and the consequent demand on Great Britain for iron would have caused the price of British iron to go up. The level of prices would indeed have been the same in the two countries (allowing for freight and the like); but it would have been higher than the foreign level which in fact prevailed. A great increase in the demand on the British iron-masters for iron, consequent on the absence of the American duty and the lessening of American product, might have raised the price in Great Britain, not only temporarily, but over the whole period. During the earlier part of the period, say until the year 1880, it is not unlikely that Great Britain could have sent to the United States all the iron that would have been imported there, if free of duty, without such pressure on the coal and iron mines as to have caused enhanced cost and permanently enhanced prices. But with the extraordinary increase in the American demand after 1880, the additional quantity could not have been supplied from Great Britain except on harder terms. The price of iron in Great Britain would have risen in face of so great an addition

to the annual demand, and the common international level would have been somewhat higher than the British price was in the absence of this demand. Thus the calculation of the extent of the higher charge for iron in the United States because of the protective system is impossible to make with exactness. It is clear that until very recent years much more was paid by the American community than would have been paid without any duty; but neither the full amount of the duty nor the full extent of the domestic product is to be reckoned in calculating the national loss (let it be admitted for the present there was such a loss), and even an approximate estimate in terms of annual or total figures would be hazardous to frame.

While some heavy burden, even though not one susceptible of precise measurement, is thus made out, it is also easily to be seen that the duties served to increase the range of the periodic fluctuations. The sources of supply were narrowed. Until the price rose high enough to bring in imports, the domestic output alone was available for the market. The differences between highest and lowest prices were greater than they would have been without a duty or with lower duties. When a "boom" came, the domestic iron which was on hand, or was obtainable promptly from furnaces in blast, soared in price to the importing level. The abrupt and great rise in price tempted equally abrupt and great increase in the building of new iron furnaces, with the consequence that, when the boom collapsed and the demand fell, a large supply from the increased number of furnaces was on the market, and caused prices to fall as unduly as they had been before unduly raised. This is but an illustration of the simple principle that, the wider the range of the sources of supply, the greater the steadiness of prices. Fluctuations of the same general sort there would have been in any case: the price of iron in all the great countries rises and falls in sympathy with general industrial

conditions. But interplay between the markets of different countries, under a system of free exchange, would have mitigated in some degree the extent of the oscillations.* The extremes were made wider apart in the United States by the protective régime; and so another count is added to the indictment which its opponent may fairly bring against it.

But, after all, the protectionist may point with pride to the final outcome. In the end his object was attained: the industry is self-sufficing, needs no further props, can supply its product as cheaply as could be done by the now fairly beaten foreigner. And have we not here an offset against all that may be urged on the other side?

The answer to this question requires an examination of the two main factors which have led to the victorious progress of the American industry. These are: first, the supply of cheap and excellent ore and coal; and, second, the better manipulation of these materials at the iron-works.

We have already examined the mode in which the great iron ore deposits of Lake Superior have been utilized. The main factor which has promoted their development has been the improved transportation, which has made available rich natural resources that would have been thought, a generation ago, too distant for use. The cheapening in the carriage of ore and coal, however, has been simply one phase—an important one, but by no means a dominant one—in the general cheapening of carriage by rail and water. European observers, from Cherbuliez and Jevons to contemporary observers, have

* That such an interplay would have lessened the fluctuations in prices is made more probable by the fact that the ups and downs of industrial activity are not precisely synchronous in the international sphere. The speculative revival in 1870-73 began in England and on the Continent earlier than in the United States. The American revival in 1879-80, on the other hand, preceded the European, as did also that of 1886-87. In 1889-90—certainly so far as iron went—the European demand, again, showed renewed strength earlier than the American; and the same is true of the period 1898-99.

been amazed at the forwardness of the American people in building and managing canals and railways, in smoothing and utilizing the great natural waterways of the continent. The immense area over which free trade was permanently assured, the mechanical genius and commercial enterprise of the people, the vistas of fortune-building through the exploitation of the great Western country,—such are the impelling forces by which the means of transportation have been driven to their high stage of efficiency. The protective system can claim no credit for this result. The advance has appeared in the apparatus for international trade as well as in that for domestic, and in domestic trade such as would exist without protection as well as in that fostered by protection. And this has been probably the one single cause which has counted for most in promoting the growth of the iron industry. Through it that industry in the United States, so far from having to deal with obdurate and limited fuel, and ores of no special excellence, has been able to bring together unlimited supplies of both materials on easy terms and in perfect quality. How much such easy command of proper materials tells is shown by the growth of the iron manufacture in Alabama and the adjoining Southern region. Here the close contiguity of coal and iron has caused a great industry to develop with extraordinary rapidity, in the face of difficult social conditions and of the competition of the strong and comparatively old industry in Pennsylvania. The cheapening of transportation has given Pennsylvania herself the equivalent of contiguous ore and coal, and has been the main factor in promoting the advance of her iron industry also.

But causes of the second sort have also had their effect,—improvements at the mines and at the furnaces and iron-works. At the mines, whether deep-worked or open-cut, the organization, the engineering, the machinery, have become better and better. The ores are systematically

sampled and analyzed, their chemical and physical constitution ascertained, and the various kinds carefully assorted for different uses or mixed in the most advantageous combinations. At the iron and steel works all the discoveries of applied science have been promptly and systematically turned to account. Thirty years ago the blast furnaces and iron-works of the United States were behind those of Great Britain in their technology. Matters went much by rule of thumb. The ore and coal and flux were dumped into the furnace, and the product marketed as it chanced to turn out.* Now the advantage, if any, is with the American works in the application of the best scientific processes. It is certain that the economies from production on a large scale—these being partly from the better organization of labor, partly from better technical appliances,—have been most fully secured in the American establishments. Here are improvements in the iron industry itself, such as may be with more reason ascribed to the stimulus given it by protective legislation.

But here, too, we are dealing with causes whose operation has not been confined to the iron industry or the protected industries in general. In part, they have been of world-wide effect. All countries have shared in the advances of the arts and the triumphs of applied science. True, in our own country special industrial excellence has been achieved in many directions; but not solely or peculiarly in the protected industries. American mining engineers have pushed their art with signal success in coal mines and in mines for the precious metals, as well as in copper and iron mines. No more remarkable achievements have been made than in electrical engineering, where a nurturing shelter from foreign competition

* See an instructive article by J. S. Newberry in the *International Review* for November, 1874, vol. i., especially pp. 778-780, where it is pointed out that at this date "the ingenious, enterprising, and energetic Americans" were still "far outdone by their English relatives."

has never even affected to play a part. A main cause throughout the industrial field has unquestionably been the wonderful growth of technical and scientific education. The supply of intelligent and highly trained experts, to whom the management of departments and separate establishments can be intrusted with confidence, has facilitated the process of consolidation and the organization on a grand scale of widely ramifying enterprises. It may be a question how far our scientific schools and institutes of technology have been successful in stirring invention and developing initiative talent. The prime essential for leadership seems to be here, as elsewhere in the intellectual world, inborn capacity. But the rapid spread and complete utilization of the best processes have been greatly promoted by them. They have been largely instrumental in enabling prompt advantage to be taken of chemical, metallurgical, and mechanical improvements in the iron and steel works. Their influence has shown itself no less in the railways, the great buildings, the textile works, the manufacturing establishments at large. Their efficacy in permeating all industry with the leaven of scientific training has been strengthened by the social conditions which have enabled them to attract from all classes the plentiful supply of mechanical talent. Hence American industry has shown not only the inventiveness and elasticity characteristic of the Yankee from early days, but that orderly and systematic utilization of applied science in which the Germans have hitherto been — perhaps still are — most successful. The rapid accumulation of ample capital has still further facilitated the ready trial and bold adoption of new and better processes.

On such grounds as these it may be alleged that the iron industry would have advanced during these thirty years in much the same way, protection or no protection. And yet the unbiassed inquirer may hesitate before com-

mitting himself to such an unqualified statement of what would have been. Rich natural resources, business skill, improvements in transportation, wide-spread training in applied science, doubtless suffice to account for the phenomena. But would these forces have turned *in this direction* so strongly and unerringly but for the shelter from foreign competition? There can be no question that the protective system enabled, perhaps caused, high profits to be reaped in the iron and steel establishments of the Central District, and that the stimulus from great gains promoted the unhesitating investment of capital on a large scale. The decisive period was the decade 1880-90. During these ten years the iron output in the Pittsburg district and the rest of the Central region served by the Lake Superior ores, grew from comparatively modest dimensions to independent greatness. Profits were good in all these years, and were enormous during the stretches of active demand in 1880-82 and 1886-87. Indeed, they continued high in the large and well-provided establishments until the crash of 1893. The mounting output is the unmistakable evidence of profitable investment. Then the community began to get its dividend: prices fell in the manner already described, and the iron industry entered on its new stage. It is certain that the same sort of growth would have taken place eventually, tariff or no tariff; but not that it would have taken place so soon or on so great a scale. With a lower scale of iron prices, profits doubtless would have been lower; and, possibly, the progress of investment, the exploitation of the natural resources, even the advance of the technical arts, would have been less keen and unremitting.

No one can thus say with certainty what would have been; and the bias of the individual observer must have an effect on his estimate of probabilities. He who is convinced, as the present writer is, that restrictions on international trade operate,—as similar restrictions on the

division of labor within a country would operate,—as a rule injuriously, will be slow to admit that countervailing gains were here secured through a larger and cheaper eventual supply. He will admit, indeed, that the thing might have been. The premises on which the young industries argument rests are not quite absent. It is not historical youth in a nation's career that is essential. Any period of rapid change and transition in the arts opens possibilities for stimulating advantageous growth, greater than those in the course of settled industry. Nor is it essential that the particular direction of growth should be designed by the legislators. The unexpected places and the new processes in which the iron industry made its advance may have been promoted by protection, even if an undeserved prop for old established routine was all that the tariff was designed to afford. But the sceptic as to the actual stimulus from fostering protection will say that it was not needed. At best, it was only a question of sooner or later rather than of whether or no; and, at all events, the burdens in the intervening period of restricted supply and high prices outweighed the gain from the eventual abundant supply and the eventual lower prices which were quickened—perhaps, and perhaps only—by the tariff system.

On the other hand, the firm protectionist, quite apart from his probably denying that there were ever any offsetting burdens (of which aspect of the controversy more will be said presently), will not fail to find in the history of the iron trade conclusive proof of eventual gain. And very possibly those economists who, being in principle neither firm protectionists nor firm free-traders, seek to be guided only by the outcome in the ascertained facts of concrete industry, would say that the verdict here was not unfavorable to the policy of fostering "national industry." Few persons, whether convinced protectionists, or thinkers of would-be judicial spirit, or plain every-day business men,

will be able to resist the appeal to national pride. Mere achievement of the leading place as the world's producer stirs a sense of triumph, as a victory on the battlefield, even in a dubious cause, kindles the pride of conquest. The position of the protectionist is not only on first inspection a strong one: after searching scrutiny, it remains, if by no means impregnable, both imposing and defensible.

The economists of Ricardo's school were wont to say that a conclusion as to the effects of protection could be reached only by deductive reasoning, such as was commonly used by them. John Stuart Mill, in his statement of the method proper in the social sciences, treated this problem as a typical one, and set forth the difficulties of disentangling the effects of tariff policy from those of the other forces operating with it on a country's prosperity. But a high authority of our own day, Professor G. Schmoller, has questioned the validity alike of the general theorem and of the particular example. Attentive examination of the industrial policy and history of this or that country, he suggests, may show whether or no protective duties serve to promote prosperity.* Is any aid in the settlement of the question of method to be had from our inquiry as to the duties on iron in the United States?

Certainly, the statistical and historical material is here as complete as it could possibly be made. The elaborate reports of the British and American Iron Associations, the publications of the Geological Survey, the detailed customs statistics, the extensive technical literature, supply infor-

* In the article "Volkswirtschaft" in the *Handwörterbuch der Staatswissenschaften*, reprinted in the volume *Ueber einige Grundfragen* (1898), Mill is referred to as trying to prove his theorem "with the inapt example [groben Beispiele] that the general inquiry, whether a system of protection makes a country rich, can lead to no result. He fails to see that he puts his question wrongly; i.e., in terms too general. Specialized investigations, such as Sering's on the German iron duties, Sombart's on the tariff policy of Italy, and others of recent times, show that inquiries which examine properly the facts in detail may prove, with reasonable certainty, when protective duties operate to promote prosperity." *Ueber einige Grundfragen*, p. 296.

mation with a fulness of detail such as the economist can hope to possess but rarely. If ever the inductive method is applicable, here is an opportunity.

In the preceding pages, the reader will have observed in more than one place the assumption that the protective system, certainly in its initial stages, involves a loss. Possibly, that loss may be offset by a gain in the later stages if the object of protection to young industries proves to be attained; but a loss at the outset there is. It would be measured, in the simplest case, by the volume of the domestic production multiplied by the rate of duty, the domestic price being supposed to be raised by the full amount of the duty. We have seen in the examination of the facts and statistics of the iron industry how much care must be exercised in applying this sort of measurement. The domestic price may not be raised by the full amount of the duty; the question of constant or diminishing returns in the competing industry of foreign countries needs to be considered; and so on.* Some loss, however, there is,—or, at least, is assumed to be.

But, as was parenthetically noted in the course of our inquiry, the stanch protectionist will deny this *in toto*. There never is a loss. The community is richer from the start. True, the prices of the articles taxed may be higher. But a home market springs into being, capital previously idle finds employment, a demand for labor is created, the rate of wages is maintained at a high level. No doubt, all such familiar disquisition will be set aside summarily by the person severely trained in economics. It belongs in the A B C of the subject; and the proper place for its discussion is the elementary class-room. No doubt, too, the reasoning on which we conclude (*pace* the

* The reader conversant with the theory of international trade will see that, in measuring the loss, not only the conditions of increasing or of diminishing return must be reckoned in, but also the equilibrium of demand between the trading countries. These more recondite aspects of the theoretical problem may be neglected for the purposes of the discussion in the text.

protectionists) that there is a national loss is, in its essence, very simple. It is but a common-sense application of the principle of the division of labor, a simple corollary from an analysis of the gains from the geographical distribution of industry, and thus a platitude hardly to be dignified as "deductive reasoning." And yet, when we meet the protectionist on his own ground, this platitude leads to some reasoning by no means of the simplest sort. Is there no real additional market? Is there employment for idle capital, or only transfer of capital previously employed? Is the rate of wages maintained? The reader who has followed the voluminous economic literature which German scholarship has piled up in recent years meets not infrequently the contention in favor of *Schutz der nationalen Arbeit*. Yet often he is left in doubt just how and why national labor is to be shielded by protection,—whether for preventing rude shocks and sudden transitions in the historically rooted industries of a slow-moving people, or for elevating the condition of labor in a whole country. Or, to take another example, it is often set forth, in the same quarters, that the burdens which the great social legislation of Germany imposes on her employers must be offset by duties on the products of competing foreign employers,—a proposition to which the stanch protectionist would unhesitatingly assent. But, if this be a good ground for compensating duties, why is not a general higher range of wages, or any other condition unfavorable to the employer,—e.g., poorer natural advantages? To answer these questions, some severe reasoning is called for: plain common sense, unsupported by sustained argument from principle, leaves us in the lurch. The most exhaustive specific inquiries, statistical and historical, as to the extent of the home market, the situation of domestic labor, the amount of the burdens on the employer, can lead us to no secure result until we have not only grasped, but followed into all its

ramifications, our first conclusion as to the effects on national prosperity of the new direction of the productive forces brought about by tariff restrictions.

Similarly, our statistical inquiry as to the American iron industry can lead us directly to no conclusion on the old and perhaps stale dispute on protection and free trade. The initial question in the inquiry—is there a national loss because of the higher price of the dutiable article?—cannot be answered from facts and figures. So far Mill and his associates were right. The effects of protection on national prosperity cannot be made out by examining, however laboriously and critically, the facts either as to the prosperity of the community at large or as to the growth of protected industries. This first and crucial question must be answered on grounds of general reasoning, and not only answered, but the answer held fast amid all the twists and turns of the controversy about markets, employment, labor, wages, profits, and employers' burdens.

If, indeed, this much be settled,—if the conclusion here assumed with regard to the general principle be acceded to,—then the next stage in the inquiry assumes a different form. The scholar above referred to has remarked that inductive and deductive reasoning are as indispensable each to the other as the right foot in walking is to the left.* For the particular sort of economic problem here under consideration the present writer believes that a long step forward must first be taken by deduction alone,—that is, by reasoning from premises established through very simple observation. But thereafter both laborious digging at the facts and their critical interpretation in the light of familiar premises must proceed side by side. Thus the varying aptitudes of different peoples are important factors in the division of labor between them. But those varying aptitudes are not of spontane-

* Schmoller, *Grundfragen*, p. 293.

ous origin. They are an historical growth,—how and why developed, we are much in the dark; and it is not to be assumed, as was so often done by the earlier English writers, that purposeful legislation cannot affect them or that here is no problem for the economist.* Or, again, to come closer to the special sorts of questions that have been considered in the preceding pages, the argument for protection to young industries cannot be disposed of by any *a priori* reasoning. We may indeed say, on general principles, that eventual gains from protection, such as this argument points to, are likely to be secured only in young countries or in periods of large industrial transition; but when and how such conditions exist must be ascertained by study of the facts. Such a study of the actual conditions of the American iron industry has been attempted in this paper, but with no expectation of its leading to any solution of the general question of principle. This precise mode of dealing with a problem very similar to our own appears in one of the investigations to which Professor Schmoller refers,—Professor Sering's monograph on the iron duties in Germany.† One conclusion in this excellent paper is that during the period from 1840 to 1860 the transition from charcoal iron to coke iron in Germany was facilitated by protection against competing English iron, and that a temporary burden on the community was justified by the establish-

* "Whether the advantages which one country has over another be natural or acquired is, in this respect, of no consequence. As long as the one country has those advantages and the other wants them, it will always be more advantageous for the latter to buy of the former than to make. It is an acquired advantage only which one artificer has over his neighbor who exercises another trade; and yet they both find it more advantageous to buy of one another than to make what does not belong to their particular trades." *Wealth of Nations*, Book IV. chap. ii. Adam Smith's reasoning in this passage holds good of any given time, but does not afford any clew to the question how the "acquiring" of advantages may be promoted.

† M. Sering, *Geschichte der preussisch-deutschen Eisensölle von 1818 bis zur Gegenwart*; in Schmoller's *Forschungen*, vol. iv. (1882). See especially pp. 70, 71.

ment, within a decade or two, of a strong and independent domestic industry. The initial sacrifice is admitted. Thereafter comes the question, to be settled only by unbiased specific inquiry, of eventual gain.

The same need of "inductive" inquiry appears in another and closely related aspect of the general tariff controversy,—the effect of protection in stimulating or retarding the advance of the arts of production. Two opposite versions are presented by the contending sides. The free-traders maintain that it checks improvement, enabling domestic producers, undisturbed by the competition of foreign rivals, to keep in old ruts. The protectionists maintain that, on the contrary, their policy stimulates competition within the country, and promotes newer and better modes of production. This, indeed, is the gist of the young industries argument. The truth would seem to be that either consequence is possible. The case is one where *a priori* reasoning leaves us quite at fault. On such reasoning domestic competition might be expected to be no less effective than foreign competition, and no more so, in bringing into action the best among known processes; and, this being equally the case at home and abroad,—such was the tacit assumption of the strict Ricardian reasoning on international trade,—the question of relative efficiency must turn solely on the goodness of natural resources, or on industrial traits so ingrained as to be equivalent to physical causes. But the free-trader qualifies this general reasoning by averring that domestic competition alone, being narrow, will not make sure that the best known processes are availed of; while the protectionist avers that this same competition, working under new conditions, will probably promote new and better ways. And, in fact, history shows that either result may ensue. It would seem, for instance, that in France, under the system of absolute prohibition against competing imports which prevailed through the first half of

this century,—in fact, up to the great commercial treaty of 1860,—not a few manufacturers failed to make use of proved and familiar processes, and were inferior to British rivals. On the other hand there were industries in France itself which had reached out into foreign markets, thus giving conclusive proof of not being behind the times.* In the United States it would doubtless be possible to find examples of the former sort: a benumbing influence has sometimes been felt. But these are exceptions. As a rule, if American manufacturers have been unable to meet foreign competition, it has not been because of inert routine. Driving competition within the country has commonly sufficed to prevent any inferiority to foreign makers in machinery and processes. If, with best endeavors, the foreigner has still been able to undersell, his success has been due to other causes,—the lack of natural advantages within the United States, or, more often, the simple influence of better openings for labor and capital than the protected industries afforded. Thus the effect of protection on improvements may or may not be deterrent. In an inert people, moving in tracks of routine and habit, it may cause outworn methods to be retained. In a quick and vigorous people it may cause better methods to develop under the novel conditions of a fresh trial. The adaptation of the chosen industry to the bent and training of the people must also have its effect. In the United States the free-trader is shown by economic history to be in the wrong on this particular point: if protected industries have continued to need protection, as so often they have, the explanation is not to be found in the retention of antiquated processes. So far as the question of economic method is concerned, here again it is clear no abstract reasoning can suffice: the history of each people and the facts of each case must be investigated, and generalization from *a priori* reasoning must be shunned.

* See Amé, *Les tarifs de douane*, vol. i. pp. 318, 338, 369, 421, as to backward industries, and pp. 349, 375, 430, as to progressive industries.

The iron and steel industry, even as regards the cruder forms of the metal,—pig iron, bar iron, steel billets, and the like,—ramifies into a number of branches. To consider these in detail would call for elaborate investigation, and indeed for greater knowledge of technical conditions than the present writer can affect to possess. The history of the industry at its basis—the production of pig iron—serves to show the nature of the growth which has taken place and to illustrate the economic principles involved. With this history in mind, it will suffice to consider summarily some other significant aspects of the changes of the last thirty years.

(1) One part of the protective system has been the duty on iron ore. This had been fixed at 20 per cent. (*ad valorem*) in 1870, and in 1883 at 75 cents a ton,—in effect, an increase over the rate of 1870. In 1894 the duty was reduced to 40 cents a ton; and it remained at this point in 1897.

It has been pointed out in the previous article that the region east of the Appalachian chain is comparatively lean in iron ore fit for the Bessemer process. The demand for this ore, which was the main factor in the development of the Lake Superior region, led also to search in foreign lands. During the decade 1870–80 there was a considerable and growing importation of iron ore in the United States. In part, the same sources were turned to as eked out the similarly insufficient supplies of Great Britain,—the island of Elba, and especially the Bilboa region in Spain. But resort was had also to nearer places, above all, to Cuba, which has important deposits on its southern shore (close to the scenes of battle in the Spanish-American War). The heaviest importation was in the year 1880, when no less than a million tons were brought in. Thereafter, while imports continued in considerable quantities, chiefly from Cuba, they were in smaller volume, the great yield from Lake Superior supplying the needs of the furnaces.

The effect of this part of the iron duties is perfectly simple. The Lake Superior ore made its way farther eastward than it would otherwise have done. The Cuban and other foreign ore was handicapped by just the amount of the tariff tax, and the iron-master near the seaboard had to pay so much more for this part of his material. The region of supply for the foreign ore was artificially narrowed. It is difficult to see how an intelligent person, unless a protectionist of the most obdurate stripe, can see in this anything other than a harmful interference with the "natural" course of industry,—that much-abused word here is strictly appropriate. The Cuban ore is nearer the Eastern region than that from the West. At best, it could not make its way inland far. The Central region would be supplied, in any case, by the Lake Superior mines. No political argument could hold, as to any resulting serious dependence on the foreign supply. Had Cuba been a part of the United States, its mines would have been welcomed as enriching the natural resources of the country; but, being outside the pale, the persons owning the Lake Superior mines were able to bolster their opposition to this particular competition by the appeal to national prejudice. Had the Mesabi and Vermilion mines on Lake Superior been a little on the Canadian side of the border, instead of being just on the American side, a very effective fight against them would have been made on the same ground—and who can say with what outcome?—by the owners of the other mines on the lake. Indeed, at the two extremes of the continent, on the Atlantic and Pacific coast, this sort of opposition has succeeded in limiting the supply of coal. In Nova Scotia are coal mines, which, though not ascertained to be of the best, are yet promising sources of supply for the North Atlantic coast. In British Columbia, close to the border, are mines which are certainly the best sources for the whole Pacific coast. New England and the Pacific coast

alike are handicapped by a duty on coal. This cutting-off of our own noses can be explained only on the ground of crass national prejudice, fomented by an intolerant protectionism, which fears that even the smallest chink in its armor may open the way to a stroke of vital effect.*

(2) Of the duty on steel rails much has been said, and the present writer has touched on it elsewhere.† It presents phenomena varying from those already discussed as to the industry at large, chiefly in the effects of combination among the protected interests.

Steel rails were the first important outcome of the Bessemer process, and the rapid development of the railway net of the United States caused a large demand for them. The duty on them was higher, in proportion, than that on pig iron; and it has had in general an effect the same in kind, but greater in degree. Until very recent years the price was always higher than the foreign price, and in years of active demand higher by the full amount of the duty. The process of manufacture must be on a large scale. The number of individual establishments hence is comparatively small; and a combination, or pool, among them was easily formed. Hence domestic competition operated more slowly and unevenly than with pig iron, which, while often produced on a large scale, is yet turned out by numerous and widely scattered establishments. For many years the steel rail combination, or what it is now the fashion to call a trust, was effective. The case was one where the duty not only bolstered up

* At Sparrow's Point, near Baltimore, one of the great steel companies (the Pennsylvania Steel Company) has erected large works, where iron and steel are made from ore brought in cheaply by sea from mines owned by the company in Cuba. The coal comes from the Appalachian chain, chiefly from the Pittsburg region, meeting the ore half-way, as is the case with the Ohio and Illinois works in the Central region. The representatives of this company have pleaded strongly for free ore before Congressional committees, and of course have met the opposition, hitherto successful, of the Lake Superior mine-owners.

† In the *Tariff History of the United States* (fourth edition), pp. 244, 272. Figures as to production, imports, duties, prices, are given, *ibid.*, p. 416.

an industry, but facilitated monopoly gains. After 1893, when the prices of pig iron and of steel (billets and blooms) suddenly fell, those of steel rails were kept for some time comparatively high, the pool succeeding in preventing the fall which would be expected in view of the low prices of the cruder forms. But in 1897, in the face of slackening demand on the one hand, growing restiveness on the other among the great and well-equipped makers against the restrictions on output and sale, the combination suddenly collapsed. The price of rails went down at once, and, like the prices of other kinds of iron and steel, reached a level as low as that in Great Britain, even lower. With reviving demand, it was certain, not only that prices would go up again, but that the pool would be re-formed, which accordingly happened in 1899. The duty served once more to aid the combination. Here we have the case of a "trust" aided by restriction on foreign competition.

There seems to be no doubt that the process of rolling steel into rails is carried on as cheaply in the United States as anywhere. Given the material as cheap, and the rails will certainly be made in the country. As in the making the iron and steel itself, so in the fashioning of the rails, great improvements have been made. Precisely the same sort of questions arise here as in regard to the cruder forms. The dominant item in the manufacture of steel rails is that of making the iron and steel,—usually undertaken by the same enterprise that carries the operations on to the next step of rail-making. But in this supplemental step the skill and energy of the American establishments have been no less marked. The same claim of the successful issue of protection may be made, and may be considered in the light of the same analysis of the forces which have impelled the growth. That a combination has prevented the effects of improvements from filtering through to the purchasers as easily as with some other

kinds of iron and steel does not alter the fact that improvements have been achieved; though it obviously strengthens the belief that the time has come for doing away with the restrictions, and compelling the domestic makers to face the world without fear or favor.

(3) A curious case is that of tin plate,—a very *Schmerzenskind* in the tariff controversy, a source of tribulation alike to protectionists and to their opponents.

Tin plates are sheets of iron or steel coated thinly with tin. Formerly they were sheets of iron. As steel became cheaper, they have been made of that material. The duty on them was for many years exceptionally low; * and imports were large, supplying the entire consumption. In 1890 the duty was greatly raised; and, as if by magic, the domestic industry not only sprang into existence, but rapidly displaced the foreign competitor. In 1894, when the political overturn caused the tariff to be remodelled in the direction of somewhat lower duties, that on tin plate was reduced. In 1897 it was raised again, though not to the rate of 1890. Notwithstanding the lower duty of 1894, the industry grew steadily from 1894 to 1897; and, after years of non-existence under high duties, it flourished and nearly displaced the foreign rival under much lower duties. The explanation is obvious. The price of all iron and steel within the country had gone down under the influences set forth in the preceding pages. Steel sheets could be had so much more cheaply than in previous years that a duty which had been ineffective before was now more than effective. Whether, with steel sheets equally cheap in the United States and in Great Britain, the process of dipping, or coating with tin, could be carried on as cheaply, and the tin plate marketed at as low a price, the present writer would not venture to say. Certainly, a very moderate duty would have sufficed to shelter the industry.

* See the memoranda in *Tariff History*, pp. 272, 302, 347.

The comparatively high duties of 1890 and 1897 were followed, however, by other results equally unexpected and much less welcome to the protectionists. To be sure, the industry grew as if by magic. Here was a case where domestic production was successfully stimulated, domestic labor employed, the grasping English producer despoiled of his market. But in the sudden burst of combinations and consolidations in 1897-99 a tin-plate "trust" was formed (in December, 1898),—a trust in an industry which had been so conspicuously paraded as a fruit of high duties that the spectacle of the nurture of this combination by protection was no less conspicuous. The attentive student of industrial history will not assent to the proposition that the tariff, or the railways, or the money power, or any such single cause, is at the bottom of the movement towards consolidation. But he must admit that in many directions it has been aided and promoted by high duties, and that the difficulties of the problem are increased by this ancillary cause. Two cases in the iron industry have here been noted,—steel rails and tin plate. Others could be found in this industry, still others elsewhere in the protected circle. The case for the protective régime is inevitably weakened by such phenomena, which go to strengthen the forces tending steadily to undermine the whole protective fabric. So far as the effects of protection in advancing domestic industry are concerned, the tin-plate manufacture does not present, as is often implied, a case of exceptional success. It is but a phase of the general history in the iron and steel industry at large.*

(4) Lastly, something should be said as to the striking events of the year 1899, to which some reference has more

* It does not appear that the tin-plate combination caused the price of this article to go up in 1899 much more than in proportion to the higher price of steel. See the analysis of its operations by Professor J. W. Jenks in the *Preliminary Report of the Industrial Commission*, Part I., pp. 53-55. Cf. the article by F. L. McVey in the *Yale Review* for November, 1898, and August, 1899.

than once been made. The course of the iron industry in the immediate past serves to illustrate and to verify the account of its development which has been given in the preceding pages.

In 1899 a sudden burst of demand for iron appeared, precisely similar to that of other earlier years of sudden activity, notably 1872 and 1880. The prices of all kinds of iron and steel rose rapidly. Speculation was rampant, the establishments in active operation pocketed huge profits, new enterprises were launched in abundance, and production advanced by leaps and bounds. All this activity was world-wide, as marked in Germany and England as in the United States. Indeed, the first advance in prices began in Europe, during the latter part of 1898. It was accelerated in 1899, and soon reached the United States. Characteristically, the American movement was more rapid and more sharp than that in other countries. In the course of the first six months of 1899 the price of pig iron doubled in Pittsburg, other articles being affected in similar degree; and the maximum reached was higher than that in England and Germany. Some reaction from this extreme was inevitable; yet for fully a year the prices of all forms of iron and steel were maintained at a range nearly double that of the preceding years, the "boom" being as sudden, as extreme, and as long continued as in any of the similar previous episodes.

But the international relations showed the effects of the new stage of the American industry, and they were different from those in former years of activity. It is true that for a time, especially in the latter part of 1899, American prices outstripped those abroad; and perhaps they would not have done so in the same degree, had it not been for the duties. The price of Bessemer iron particularly showed a great advance, reflecting the heavy domestic demand for this all-important material. Yet now, in contrast with former experience, it was the Euro-

pean iron-master who looked askance at the American market, uneasy lest it should relax and lessen his rich harvest. It is true that some imports of iron and steel into the United States were tempted at the time of the highest prices of certain articles, especially of Bessemer steel products. But, on the other hand, exports from the United States, of crude iron as well as of finished products, continued with little abatement in any one article and with great increase in the volume of total exports. Some of the combinations which controlled for the time being the output of particular articles reaped huge profits,—profits due partly to the general situation, and so shared by all iron enterprises, whether combined or not, but profits which were swelled for a while by the duties which prevented foreign competitors from entering the market. It cannot be said, therefore, that the duties in this latest period of activity were without effect. They did, in some degree and in some cases, once more enable domestic prices to be pushed higher than would have been the case without duties. But such effects were confined mainly to a few months of extreme speculation, and were very different in kind and in significance from the burdens which the community bore in earlier years. On the whole, this period of sudden activity, no less than the preceding years of prolonged depression, showed that the days of secondary place for the American iron industry were past, and that its new, independent, and commanding position had been definitively established.*

* Lack of space forbids a more detailed consideration of this striking period, whose course, indeed, is as yet far from fully run. The extent and the dates of the changes in prices are indicated roughly by the following figures:—

	England.		Pittsburg. Bessemer pig.
	Middlesboro pig.	Hematite.	
January, 1898	\$9.80	\$11.70	\$10.00
July, 1898	9.75	12.25	10.30
January, 1899	10.90	14.00	11.00
July, 1899	16.70	18.00	20.45
January, 1900	16.70	13.60	25.00

So much as to the past. What now of the future?

The cheapness of crude iron and steel led to considerable exports in the years 1896-98. A large quantity of Southern pig iron was exported, chiefly to England,—a veritable sending of coals to Newcastle. Steel rails also went out to Japan, to Russia, to all parts of the world. The United States, once a large importer of iron and steel, has become a large exporter. The exports first exceeded the imports in the year 1893. Since then they have steadily risen, and have come to form a large item in the outgoing foreign trade.*

The export of some forms of iron and steel, however, is an old phenomenon. Various kinds of hardware and machinery have been sent to foreign countries for many years,—locks, hinges, and other ironware for houses, tools, sewing-machines, metal-working and wood-working machinery, and the like. The steady disposal of such articles in markets abroad, notwithstanding the dearness of the materials, was certain proof of great aptitude for making them and of great efficiency in American industry. Naturally, as the material became as cheap or nearly as cheap within the country, these exports increased.

Whether the exports of the cruder or the more highly manipulated forms of the metal will show the larger growth in the future remains to be seen. The early attainment of the export stage by the more advanced parts

*The following figures, which state the value (millions of dollars) of the imports and exports of "iron and steel and manufactures thereof" from 1880 to 1899, tell their own tale:—

<i>Calendar years.</i>	<i>Exports.</i>	<i>Imports.</i>	<i>Calendar years.</i>	<i>Exports.</i>	<i>Imports.</i>
1880	15.4	64.0	1890	27.0	44.5
1881	18.4	46.7	1891	30.7	62.0
1882	22.6	68.7	1892	28.0	33.9
1883	22.6	48.7	1893	39.1	29.6
1884	19.3	37.1	1894	36.0	20.8
1885	16.6	31.1	1895	38.1	25.8
1886	14.9	41.6	1896	48.7	19.5
1887	16.2	56.4	1897	62.7	13.3
1888	19.6	42.3	1898	82.8	12.5
1889	23.7	42.0	1899	105.7	15.1

of the industry, and the traditional adaptation to it of American inventive genius, point to the continuance and preponderance of this sort of trade. It is certain that at home the American iron industry will have virtually nothing to fear from foreign rivals. Some specialties, doubtless, will continue to be imported; but specialties in greater number, on the other hand, will be exported, and the foreign producer will have more to fear from international rivalry than the domestic. The main effect of protection will be, not to change the direction in which labor and capital will be employed within the country, but to facilitate occasional combination, in some cases perhaps permanent combination, among the protected capitalists—who may turn over a scrap of the plunder to their workmen—for levy on the public at large.

But not only the iron industry itself will dominate the international market: its success will affect the whole range of American industry and the whole working of the protective system. Cheap and abundant iron and steel, with a wide diffusion of enterprise, mechanical skill, and scientific knowledge, insure a great development of manufactures. All the experience of the decade just passed confirms what the present writer said when discussing in 1890 the renewed application of extreme protection under the tariff act of that year: the question is not whether the United States shall be a manufacturing country; it is whether she shall cherish those manufactures which stand of their own strength or those which need to be bolstered by artificial aid. Weaklings there always are, and the diligent legislator who scans the industrial world for them will find enough to engage his attention. But there are plenty of growing and stalwart industries, to which capital and labor will betake themselves unaided. The recent growth of the iron trade not only makes this obvious in that industry taken by itself, but points to the same outcome in a wider and wider field of general manu-

factures. It is, therefore, not rash to predict that, as the twentieth century moves on, the protective system will have less and less hold on public attention, and will eventually be shorn of its extreme and now characteristic features. This change may come slowly, and perhaps will come by gradual steps; and it would certainly be rash, in view of the recrudescence of national spirit and prejudice the world over, to predict that anything like a system of consistent free trade will be witnessed by adults now living, if ever. But protection as a system will have a less strong hold on the imagination of Americans. To this change in attitude the policy of colonial expansion will contribute,* and not less the growing stress from the great social problems which must more and more press for solution. The day when protection could be made the great issue before the American people is gone, as irrevocably as is the period of its real effectiveness in shaping the nation's industrial development. Other questions — the relations of labor and capital, the functions of the State, the very foundations of the social order — will engage the public mind; and the hoary controversy about protection will be not indeed settled, but disposed of and set aside by the working of other great industrial and political forces.

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*See the suggestive article on *Expansion and Protection*, by Professor H. H. Powers, in this Journal, vol. xiii. p. 36 (July, 1899).

THE GAS COMMISSION OF MASSACHUSETTS.*

IN an earlier series of four articles † on "The Gas Supply of Boston," I sketched the financial and political history of the companies in that city. The logical conclusion from that narrative is that the relations of the companies to the investor, the public, the legislature, and the Commission, are not satisfactory. Since state action has not produced satisfactory results, it seems desirable to trace the underlying causes of this apparent failure. Let us ask, then, what evils have existed at the different stages of development, how these evils were regarded at the time by the public, what steps were taken to prevent and cure them as they arose, and how far and why such efforts failed of success.

Before taking up the history of the lighting companies in Massachusetts, it is desirable to make some general reference to similar companies in other parts of the country.

When it began to dawn on the public mind that competition in the gas business was no protection against corporate abuses and excessive charges, and when competition by the introduction of new processes and methods became so intense as to make the investment in this industry insecure, new relations had to be established between these companies and their patrons, on the one hand, and the companies and the public authorities, on the other. The consumers wanted good cheap gas, although their ideas of a reasonable price were necessarily vague;

* The legal title of this body since the Electric Light Companies were placed under its jurisdiction (Acts of 1887, c. 382) is "The Board of Gas and Electric Light Commissioners"; but, since I am here concerned with the board chiefly in its relation to the Gas Companies, I shall refer to it briefly as "The Gas Commission."

† Published in this Journal for July and October, 1898, and April and November, 1899.

and the companies wanted protection from competitors. The general public, so far as it had any views on the subject, believed that experience had demonstrated that gas must be supplied either by unregulated private companies or directly by public authority. Corporate managers had preferred, from the very beginning of the great development of the modern business corporation, to bear the expense of buying off competitors rather than to make known to the public the affairs of the companies. The undertakers of gas enterprises, for reasons already indicated, were no exception to this rule. They declared almost without exception that their companies were private undertakings, and could not legally or morally be subject to public control.

It must be admitted that the absence of any effective control in this country, as well as such legal decisions as existed, lent color to this view. Virtually, no administrative control was exercised over these companies by any American Commonwealth; while statutory limitations on the price of gas and the capitalization of companies were, except in Massachusetts, simply ignored. Rival companies so far had been the only weapon wielded in the supposed interests of the consumer. The direct fruit of such attempts was always the same,—over-investment and a rate war, followed by consolidation and unregulated monopoly, with prices usually sufficient to pay a dividend not only on the unnecessarily large investment, but also on the watered stock occasioned by the consolidation. The indirect outcome of such contests was generally a bitter hostility between corporations and those whom they served. It would scarcely be extravagant to say that each party had come to regard the other as an enemy to be exploited and injured as much as possible. One natural consequence of this method of procedure was that the companies tried to make very large gains in times of comparative calm to offset possible losses from future attacks of council or legislature.

This warfare had lasted so long that the public had lost confidence in the ability of the municipal governments, which at that time usually had the right of letting in or keeping out competing companies, to supervise or deal with the gas companies. In fact, the whole history of the relation of the cities to the companies in the past had proved that, in the matter of drawing contracts for public lighting, the companies nearly always overtopped the municipality and got the better of the bargain. With the exception of state inspection of the purity and quality of gas, and the testing of meters in Massachusetts since July 1, 1861,* the private citizen throughout the United States was left to make the best terms he could with the company. In regard to public lighting everywhere the cities often exacted from the companies such low prices as to make the prices for private lighting, under all the circumstances, necessarily high. A low price for public lighting was often made the condition of admitting a new company to a city. Even then there was constant friction between the companies and the public authorities in regard to the contracts for public lights. If, then, the cities were unable, even at the sacrifice of the interests of the private citizen, to make satisfactory arrangements with the companies for public lighting, it could scarcely be assumed that these same local governments, if given legal power, could exercise a wise and efficient supervision of the companies in the name of the state.

But one remedy for existing evils, therefore, seemed available; namely, to forsake traditional and instinctive feelings on the question of local self-government, and turn over the control of these companies to some organ of the Commonwealth. For at the time of which I am now writing the agitation for public ownership, while not by

*The title of this act is significant: "An Act for the inspection of gas meters, the protection of gas consumers, and the protection and regulation of gas light companies." The bill for this act was drafted by the president of the Boston Company. *Report of the Boston Gas Hearing of 1867*, p. 440.

any means unknown, was not strong enough to count as an important factor. It was also becoming increasingly plain to all but a few corporate managers that the public was not yet prepared to settle down calmly to uncontrolled private monopoly. The attitude of the managers of these companies towards what they regarded as interference with their private affairs had been such for many years as to render futile any attempt to control the companies until changed methods of production should increase the danger from competition. No revolutionizing discoveries were made in the industry until towards 1880; although even before this date the companies had been alarmed at times by the introduction of petroleum, and towards the end of the period were seriously threatened by the application of electricity to illuminating purposes.*

The two decades preceding the introduction of electricity and water gas make a peculiar period, during which the organization of competing companies in nearly all the states caused difficulties. But the companies were able to maintain almost complete secrecy, and, without any great changes in processes, to make increasing profits. This came about from the great fall in the price of materials for manufacture and plant, from many minor improvements in manufacture and choice of materials, together with an enormous increase in the demand for gas because of the increased well-being of a rapidly growing population, which was concentrating itself more and more about the gas companies. At the same time the increased consumption of gas made possible a much greater net gain from the residuals. Thus it was easy for established companies to carry the expense of driving out competitors and still distribute dividends as large as public sentiment would permit.

So long as the companies could maintain successfully

* The first electric lighting company was organized in Massachusetts in 1880, under the general law. *Second Annual Report of the Gas Commission*, p. 57.

the secrecy of their accounts, and continued to believe themselves entitled to all they could get out of the public, one of two results was sure to follow. They would either adopt the practice, almost universal outside of Massachusetts, of greatly over-capitalizing their investment, and thus distribute their total earnings without letting the public know the relation of their dividends to actual investment, or, as the majority of the larger Massachusetts companies did (in a measure restrained by statutes against stock-watering),—pay the maximum traditional dividend of 10 per cent., put their surplus into extensions of the plant, and, as it were, sleep. Truly, in such a typical case as that of the Boston Gas Light Company, to have had greater earnings would have been a genuine embarrassment; for the company was owned and managed by local residents of prominence, who did not care to violate the statutes by watering the stock. They dared not regularly distribute more in dividends. They had been able for years to meet their dividend charges and make extensions required by a rapidly growing population out of earnings.* There was no sign of a change in this particular as long as the selling price of gas remained relatively so high.

It did not seem wise to the management to call public attention to the great prosperity of the company by reducing prices to such a point as would probably give the same net income from much larger sales.† Until the public could acquire more knowledge in regard to the cost of

* During the fifteen years ending June 30, 1892, this company, with a share capital of \$2,500,000, put \$3,300,000 of its earnings into extensions, or at the rate of 9 per cent. of its capital stock per year. For the last three years of this period the surplus went largely to the Bay State Company. Hence it is fair to assume that the company was regularly meeting all its legitimate expenses and showing net gains of fully 20 per cent. per annum. See *Eighth Annual Report of the Gas Commission*, p. 255.

† The Gas Commission, in its *First Annual Report* (1886), page 16, remarks that "some companies have seemed to prefer a small consumption at a high price, assuring good dividends, to an increased consumption at a lower price with no greater dividends."

making and distributing gas, there seemed no particular occasion for agitation or complaint against this or similar companies. The management was honest, the prices, so far as the consumers knew, were reasonable, the dividends were not unreasonably high, and the company not only greatly under-capitalized, but known to be so.* This last fact, so far as the consumers were concerned, counted for much in an age of almost universal stock-watering. If the danger of competition could have been averted, the situation might have lasted indefinitely. For the rate of interest throughout the country was rapidly falling; and every increase in the investment under existing conditions, while not promising any addition to the amount distributed in dividends until the share capital could be increased, did apparently tend to make the increasingly handsome dividend of 10 per cent. more certain for a remote future.

Outside of Massachusetts the business was almost uniformly so profitable as to enable the companies in large cities to maintain high nominal dividends on an excessive capitalization. Generally speaking, the gas business before 1880, under old processes, was unusually profitable throughout the country, even after carrying the heavy expenses of buying up competitors. Furthermore, the companies appeared to be so thoroughly entrenched as to render useless any attempt to impose effective regulation upon them, even in Massachusetts. There was no public demand for regulation of the companies. Both the public and the companies were inclined to let well enough alone,

*The property of the Boston Company was valued by the tax assessors at \$4,129,000 in 1886, while the total capitalization was but \$2,500,000. *Second Annual Report of the Gas Commission*, p. 20.

That anti-stock-watering laws and sentiment in Massachusetts had not been without effect is further seen by the fact that in 1886 all the gas companies of the state were valued for purposes of taxation at \$12,189,768; while their total capitalization (stock and bonds) amounted to but \$11,731,850, nearly half a million less than the assessed valuation. *Third Annual Report of the Gas Commission*, pp. 19, 20.

and to jog along as they had been doing for so long a time. The public did not stop to consider how much more a 10 per cent. dividend in this industry meant in 1880 than in the days when that rate first came to be considered a fair one.

All this was changed very suddenly when the holders of water-gas patents, the makers of electrical apparatus, and the promoters of electric lighting companies, all swept into the field at the same time. In order to get control of the field, these advance-guards of industrial progress first made the air heavy with complaints about monopolies, extortionate prices, inadequate service, fabulous profits, and antiquated management. City councils the country over proved no match for the handful of aggressive and shrewd manipulators in control of the new processes.*

It is interesting to note that about this time the subjects discussed at the annual meetings of the various associations of gas manufacturers entirely changed. Competition occupied a prominent place in almost every meeting of this kind, and especially in the presidential addresses, for about a decade. The question before had been how to prevent state interference. It now became how to stimulate, direct, and control state interference so as to protect investments. The more far-seeing members of the associations recognized that the days of high charges and high profits, as measured by past standards, were gone forever, and that, if the companies wished to appeal to the state for protection, they must so manage their capitalization as to claim protection for "honest investments." They realized, also, that a request for protection would raise the cry of monopoly, which could be

* It will be recalled that the ultra-conservative managers of the Boston Company (who were no longer young in years) had apparently taken the precaution as early as 1880 to shut out water gas by statute. See this Journal, vol. xii. p. 426. A bill for a state gas commission was introduced into the legislature, and killed in committee in 1880. The companies had not yet made up their minds that they needed state protection.

safely met only by an acknowledgment of the state's right to regulate the monopoly in the public interest. Furthermore, the companies knew that this meant a high degree of publicity,* and that an impartial commission to act as arbitrator between the companies and the public was probably the best means of meeting the new needs of the companies. The idea was not a new one, for disinterested persons had suggested it years before. The remarkable thing was the suddenness and thoroughness with which the gas interests † embraced the suggestion after so completely rejecting it for so many years. So long as their enormous profits seemed perfectly secure, with so little effort on their part, the statement that the state ought to exercise control over the companies appeared absurd and even outrageous to them. The question now became simply how much of their previous claims the companies could afford to give up for the sake of state protection ‡ against rivals.

* Perhaps the most typical statement of the changed relations is to be found in the remarkable address of the late J. C. Pratt before the American Gas Association in 1882, entitled "The Future of the Gas Interests." *Proceedings*, vol. v. pp. 156-169. Mr. Pratt was not at that time a recent convert, — rather, a prophet. He served for thirty-six years as the head of the Jamaica Plain Company, and during all that time gave the financial statements prepared for his directors to the public. *First Annual Report of the Gas Commission*, p. 5.

Mr. Pratt spoke in similar vein before the same association in 1886. *Proceedings*, vol. vii. p. 232.

† The Choate Committee had recommended this form of control in 1877. See this *Journal*, vol. xii. p. 424. The presidents of the American Gas Association in their annual addresses took strong ground in favor of such a commission, in 1883 (Forstall), 1884 (Stedman), 1885 (Vanderpool), 1887 (Greenough), 1890 (Taber), 1892 (White), and 1894 (Pearson). In more recent years purely technical matters have occupied most of the time of these meetings. Nearly all the gas associations of the United States for years recommended state commissions for all the states. See the *American Gas Light Journal*, vol. xlv. pp. 5-7.

‡ From 1855 to 1870 the gas companies in Massachusetts under the general law enjoyed a statutory monopoly until they had paid more than 7 per cent. dividend for five years. See Statutes, 1855, c. 146, and 1870, c. 353. But, since there is no constitutional prohibition of special legislation in Massachusetts, the legislature could at any time introduce competing companies by special act.

The vacillating policy of the board of aldermen of Boston in the early eighties in regard to competing companies convinced the old companies in Massachusetts that they could not count on any protection from such sources. The moment that those in control of the water-gas patents gained confidence in their ability to make out a case plausible to the public, the contest between the old and the new under existing legal conditions became an unequal one. By 1884 the promoters of new enterprises had worked up enough sentiment against the existing order of things to occasion the organization of the Consumers' Company at Boston, and had themselves organized the Bay State Company. Before the legislature met, at the beginning of 1885, the first of these companies claimed * that it had the legal right to lay pipes in the street; and the council was wavering, so that it seemed likely to grant privileges in the streets to the Bay State Company.

The managers of the Boston Company still regarded the prohibition of water gas a bulwark against competition, and continued to regard the new processes as valuable for blackmailing purposes only. With all of their self-contented conservatism, however, they recognized that the popular mind had been worked up to a pitch which made legislation against existing companies probable. As a concession, therefore, to popular sentiment, those in control of the Boston field had the city government petition the legislature to create a board of state gas commissioners.†

It should be observed that, although the advocates of new methods and improved processes had, by more or less direct means, created some public feeling, yet the real struggle from now on was not between the public and the

* See this Journal, vol. xii. p. 424. On the basis for the claim of this company, see the opinion of Mr. E. R. Hoar, printed in the *Advertiser* of January 12, 1885.

† The city of Boston presented a similar petition to the legislature in 1867 as an alternative to threatened competition.

corporations, but between the old corporations and the new. This fact has a most important bearing on the later course of affairs. The petition for a state commission was approved by the city before either of the new companies gained admission to Boston, and while "a bitter struggle was impending with the Consumers' Company" in the council.*

The legislative committee to which this matter was first referred reported adversely on April 10, 1885. Although the Boston Company virtually drew the first bill,† the thing that company most wanted—namely, protection against competition—was not included in the first draft, but was introduced afterwards by representatives of the company.

Although the bill was hotly contested,‡ and debated at unusual length,—not less than thirteen set speeches being made on the motion to pass to the third reading in the House,—it was reasonably certain from the beginning that it would pass in substantially the form desired by the companies.

The Bay State Company got its rights in the streets before the bill became law. It was, perhaps, fortunate for the subsequent history of the Commission that the contest over its creation had been confined almost exclusively to the companies; for this gave the Commission time to organize and acquire knowledge before it was called upon to take any action on controverted points. For reasons made

* See p. 4, *Arguments of W. E. L. Dillaway before the Public Service Committee, legislature of 1885.*

† On the relation of the Boston Company to this bill, see the *Boston Advertiser* of February 21 and May 29, 1885, and the *Journal* of May 28, and the *Globe* of May 29. All the newspapers of prominence, except the *Globe*, supported the bill.

‡ The opponents of the bill stole a march at one stage, and by a vote of 80 to 57 struck out the clause limiting competition (Federhen amendment). Upon reconsideration this amendment was voted down by 73 to 55; while a similar amendment was lost in the Senate on June 2 by a vote of 5 to 22.

The act was approved, and went into effect June 11, 1885 (c. 314), entitled "An Act to create a Board of Gas Commissioners."

plain in the previous articles the two chief parties, the Bay State and the Boston Companies, did not care to bring any case before the Commission for some years; and the public took but little interest in its affairs. Both the great companies were disappointed: the old, that it did not get the Commission established before the other company was let in; the new, that the Commission was established at all. The other companies of the state, not realizing the extent of the impending revolution in the industry, had but little fear of reduction of price by the Commission, and were glad, on the whole, to have the prohibition of competition, although, perhaps, underestimating its importance.

The original act has not been essentially changed, except by constantly enlarging the powers, functions, and duties of the Commission. The Commission consists of three members appointed by the governor with the consent of the council for terms of three years, one going out each year. The commissioners are removable for cause only, and after a public hearing. The governor designates the chairman of the board, and with the consent of the council appoints a permanent clerk.

The Commission from the start was given general supervision of all the companies in the state, and required to see that they obey the law. In order to provide itself with the necessary information to enable it to carry out this provision, it is armed with practically unlimited inquisitorial powers.* The powers of this nature granted the Commission are much larger than have ever before been given in this country to any similar Commission dealing with industrial or financial interests. Upon the

*The original act gave the Commission the right to prescribe the form of the annual reports to be made by the companies. Upon the recommendations of the Commission, later acts allow the Commission to prescribe the methods of keeping the books and accounts of the companies, and even to require the companies to keep such station and distribution records as the Commission may direct. Acts of 1886, c. 346, and Acts of 1896, c. 480.

complaint in writing of the mayor or aldermen of any city or of the selectmen of any town, or of twenty consumers of any company, in regard to the quality or price of gas, the Commission may, after a public hearing, order such an improvement in the quality or reduction of the price as seems good to it.

Any interested party may appeal to the Commission from a vote of the local authorities either shutting out or letting in a competing company.* The decision of the Commission (after a public hearing) on such appeals is final. The Commission is required to report all violations of law on the part of the companies to the Attorney-General, and may apply directly to a court of equity † to enforce the law and all lawful orders of the board. The act also requires the Commission to make an annual report to the legislature, with recommendations of needed legislation.

It is fortunate that the powers of the Commission were no greater at the beginning, and that they have been enlarged from time to time as the Commission has felt its way and become better qualified to act wisely in a constantly widening field. Although the legislature has on several occasions, under the pressure of private interests and excited public opinion, acted contrary to the advice and better judgment of the Commission in regard to new legislation, it has never tried to interfere directly with the Commission by transferring or controlling its powers or compelling it to act or refuse to act in any particular manner.

No formal case was presented to the Commission for adjudication until it had been organized about a year and

*The local authorities are forbidden to vote to let in such competing company, except after a public hearing before them.

† By chapter 426, Acts of 1896, any justice of the Supreme Judicial Court or of the Superior Court is given equity jurisdiction in term time or vacation, upon the application of the Commission, to enforce any law or any lawful order of the Commission in regard to the supply of gas or electric lighting.

a half. Meantime it had made elaborate investigation on gas matters inside and outside the state, had got the reports of the companies into fairly good order,* and by personal visits to the works and managers of every company under its jurisdiction had exercised great influence on the accounts, over which at that time it had no compulsory powers. The First Report, 1886, deals largely with non-controversial matters, such as the necessity of uniformity of accounts and of fiscal years, accidents from gas, the theory of capitalization, the danger of allowing franchises to be leased or sold and of allowing companies to be managed entirely by non-residents.

The legislature attempted to embody in the act † of 1886 (c. 346) most of the recommendations of the Commission, and to prevent anticipated evils on the part of the Bay State Company.

In the Second Annual Report the Commission implied that in its own estimation it had already become the expert arm of the legislature in gas matters by saying ‡ that it had not suggested any form of legislation, but that the commissioners stood ready to place any knowledge in their possession at the service of any committee of the legislature. In fact, the commissioners aspire to be not only the advisers of the legislature, but also general sources of disinterested information in all lighting matters. This is shown by the statement in the Seventh Annual Report § that, "in addition to the duties imposed by the statute, it (the Commission) has been frequently consulted by city and town committees, managers, and in-

*That there is room for still further improvement in this particular may be inferred from the argument of Mr. G. W. Anderson in the Haverhill case, December 13, 1899, pp. 6, 7, pamphlet edition.

† The act forbade the leasing or sale of works or franchises, the issuing of bonds below par or in excess of the capital stock; authorized the board to compel service, placed individuals selling gas under the jurisdiction of the board, gave the Commission the right to inspect books and accounts, and fixed a uniform financial year for all the companies in the state.

‡ Page 58.

§ Page 3.

vestors in regard to questions concerning gas and electric lighting. Those interested in these matters have come to regard it as the most convenient source from which to obtain reliable information as to the standing and financial operations of the companies, and their relation to the local authorities, as well as in regard to many of the technical features of the business."

While it is doubtless possible for the Commission to overestimate its influence on legislation, and while it is beyond question that the legislature has at certain critical points ignored the advice of the Commission, it is certainly desirable that this advisory function should become a more and more prominent one. It is also plain that, if the Commission proves able to maintain its existence permanently, it must become a more and more important source of general information on lighting matters; for its opportunity of acquiring information capable of comparative use is not only unique, but is even greater than that of those actually engaged in the management of companies.

The Commission has met with but little direct opposition* from the companies, but has had great difficulty in getting the accounts kept properly and the annual returns to the Commission sent in promptly.† Probably the most important work of the earlier years consisted in getting the companies to keep their books and accounts in such a way that the managers themselves could know what they were about, and the Commission could use the reports of the companies for purposes of comparison. When this result had been reasonably attained, one of the greatest temptations to loose and dis-

*I have discovered, in the whole history of the Commission, but a single case where a company formally refused information to the board. That was a case in which the company was just ready to go into insolvency.

†The delay in making returns was partially checked when the legislature, upon the recommendation of the board, fixed a per diem penalty for such delay. Acts of 1891, c. 263.

honest management of companies disappeared; for it could not be supposed that such management could escape detection, and the certainty of being found out is always one of the greatest deterrents from unlawful or improper conduct of any kind.

But work of this kind, however important, is not apt to be highly appreciated by the public. In the beginning the Commission had but two powers likely to attract immediate favorable public notice,—those relating to price and to competing companies. So far as the people consciously expected benefit from the Commission, they probably looked for it from price reductions by direct order. Even this expectation was so vague as to overlook the fact that the power could not be exercised by the Commission upon its own initiative. Many of the criticisms passed upon the board in regard to price reductions show that the public even yet usually overlooks the fact that the Commission has no initiative at this point.

As a matter of fact, but few requests for reduction of price have been presented to the board. Many of these have been withdrawn before a decision was reached, because the company voluntarily met the original demands of the petitioners or effected some other satisfactory compromise. It is a striking fact, however, that in fifteen years the board has acted adversely on but two petitions for a reduction of price. In both of these cases the Commission seems to have justified its decision at the time to the petitioners.*

I believe it can easily be shown that the chief effect of the Commission on price has not only been an indirect

*The cases were those against the Cambridge and the Arlington Companies, both brought soon after the great agitation and legislative investigation of the Bay State Companies in 1893. The Cambridge Company had earned only a fair dividend on capital contributed by its stockholders, and carried a surplus which would, the board believed, enable it to make further voluntary reductions in price. It had already reduced its price by nine stages from \$3.50 to \$1.35 per thousand feet.—The Arlington Company, from the nature of its territory, could not expect large increase of sales from a reduction in price,

one, but has come largely from action in which the question of price was not a direct issue. Nevertheless, since we can best judge of indirect influence by a study of direct action, let us consider briefly some of the more important cases dealing directly with the price of gas.

The first important case of any kind brought before the Commission was a complaint presented January 4, 1887, by the consumers, against the quality and price of gas furnished by the Worcester Company. There could scarcely have been a case in which all the circumstances were more favorably arranged to enable the Commission to establish methods of procedure, and to lay down the general principles of government regulation by commission.

The Commission has from the beginning assumed that the state, in establishing a Commission, meant to obtain through regulated monopoly the benefits heretofore sought by competition.* According to this view, monopoly is a special privilege granted solely in the public interest. On this basis the protected monopoly is not entitled to charge more than is sufficient, with honest, progressive, and efficient management, to give a fair rate of income on the capital actually contributed by the stockholders. The doctrine of efficient management has been enforced in England for a generation, but was applied by this board for the first time in the United States.

and had never paid a fair dividend on the actual investment. The justice of the decision in this case is shown by the fact that the company failed and went into insolvency in March, 1899. *Tenth Annual Report*, pp. 12-14, 21, 23. *Fifteenth Annual Report*, p. 5.

During the present year the legislature has taken the initiative in ordering the Commission to consider the expediency of reducing the price of gas in both Lynn and New Bedford. In the first of these cases the decision (May 15, 1900) was against any reduction. In the New Bedford case (decided June 6, 1900) the board reduced the price slightly, and the company promptly accepted the decision.

*This view was confirmed by the Supreme Court in 1892, in the case of *Attorney-General ex rel. Board of Gas and Electric Light Commission v. The Walworth Light and Power Company*.

The Commission believed that, as the legislature in creating the Commission meant to introduce a new principle, so it intended also to break entirely with the old method of procedure. The old method was to proceed to enforce statutory provisions by means of the ordinary civil courts, with all their inevitable delay, expense, and technicality. It generally happened in such cases that all the important evidence was in possession of one party, with the burden of proof on the other. This system broke down more thoroughly, perhaps, at this point than at any other. The attempt to employ expert witnesses proved comparatively useless: first, because the only men whose knowledge justly entitled them to be called expert were too expensive for the plaintiff to employ as witnesses; second, because such men expected future permanent employment from the companies, and, therefore, would not incur their enmity by testifying; and, third, because, however much knowledge they might possess, it was generally knowledge of a different set of circumstances from those under consideration. The Commission, therefore, on the supposition that it was created in order that it might gather and become a depository of a large body of comparative expert knowledge, acquired from every available source, refused to allow this first important case to turn on evidence furnished by the petitioners, who in such cases rarely have any accurate knowledge on the cost of making and distributing gas.

In addition, therefore, to taking all the evidence offered at the hearing in this as in all later cases, the board felt justified in making on its own initiative a most thorough examination into the history, policy, methods, and condition of the company from its organization.* This examination extended not only to the manufacturing and distributing plants, the station records, the books of account,

* In later cases the Commission has employed experts to make such an examination when that method seemed likely to furnish a sounder basis for judgment.

the corporate records, and the material on hand, but even to the services, pipes, burners, and fixtures in private buildings supplied by the company. In other words, the Commission, far from being bound by strict rules of evidence and procedure, applied to the case all the knowledge in its possession, including that obtained not only from years of study, but also from previous inspections of this and other companies, and from the sworn returns of every company in the state. The board was thus able to use its own previous knowledge as a general standard by which to measure the local circumstances in the particular case.

It appeared that the Worcester Company had from its organization — more than a generation ago — enjoyed an undisturbed monopoly in the second largest city in the Commonwealth, and had, during nearly the whole of this period, paid an annual dividend of 10 per cent. on its share capital, which had been fully paid in cash. The Commission found that the price was high and the number of consumers small for so large a city; that the total consumption was not more than a third to a half what it ought to be; and that, although the stock had never been watered, the capitalization was altogether too large for the output. The management was declared to be "narrow and illiberal," and the distributing system inadequate in extent and quality, even for the consumption of that time. The board recommended * very heavy expenditures for reconstructions and extensions, and a reduction of the price of gas from \$1.80 to \$1.50 net per thousand feet.

A few years later, and just after the company had voluntarily reduced the price from \$1.50 to \$1.40, the mayor

* The statute authorizes the Commission in such cases to order a reduction in the price. The uniform practice, however, has been in the first instance simply to recommend. Such recommendations were always accepted by the companies until the Haverhill Company, to which reference will be made later, rejected the recommendation of January 23, 1900.

In a few cases companies have petitioned for a rehearing, alleging changed circumstances or new evidence.

and aldermen of Worcester petitioned the board for a still further reduction of price. It appeared that, since the previous reduction by the board, the company, in carrying out the suggestions made in regard to reconstructions and extensions, had spent \$350,000 without any increase of the share capital, which still stands at \$500,000. By reducing the dividends,* the company had been able to put \$250,000 out of earnings into these improvements, the remaining \$100,000 being represented by outstanding bonds. The Commission, while commending the company for faithfully carrying out the earlier suggestions of the board, found still further expenditure for improvements necessary. It refused to sanction the idea of a stock issue for such purposes, declaring in this as in all other cases that "the ordinary demands which a progressive management desires and is bound to meet may fairly be provided out of income, when the price of gas is not made so high as to be burdensome."† In the face of all these facts, and notwithstanding the previous voluntary reduction of price and the already reduced rate of dividend and the existing debt, the board lowered the price once more to \$1.25.

As will appear later, this theory of capitalization, which has been consistently adhered to by the board, leads inevitably in the case of growing companies to a large surplus; and such a surplus, after it reaches a certain limit, offers temptations, apparently irresistible, to capitalize it directly or indirectly.

Some of the peculiar difficulties of dealing with such a surplus, as well as some of the perplexities of determining what is a fair price of gas in the complexity of modern industrial conditions, will come out if we consider a few other typical petitions for a reduction of price.

* The first year after the reduction the dividend was but 6 per cent., the next year 6 1-2, and for the next seven years 8 per cent.

† *Tenth Annual Report*, pp. 31-33.

A case was brought against the Springfield Company in 1893. This company, while paying regular annual dividends of from 8 to 10 per cent., and carrying a steam-heating plant at a heavy loss, increased its capital stock from \$50,000 to \$450,000; and the subscribers paid for this new stock chiefly from the proceeds of extra dividends. The proceeds from the increase of stock were then, for the most part, put into extensions. That is, although there was no technical violation of law, the company in essence simply capitalized its surplus earnings from the sale of gas. The Commission recognized that the company, in maintaining the steam plant and capitalizing the surplus in this manner, had violated no law. But it could not see why the consumers of gas should be made to bear the burden of the loss on the heating plant; while the attempt to earn full dividends on the capitalized surplus, in the opinion of the Commission, was contrary to the policy of the state as understood by the Commission.

The theory of the Commission in regard to the surplus arising from the earnings of the company was, and is, that such surplus, being contributed entirely by the consumers, so far as it is not necessary as a sort of insurance fund to guarantee future dividends on the original capital contributed by the shareholders and to enable the company to make future reductions of price, has no reason to exist, and has been taken from the consumers by an unjust price. It follows, therefore, that, although a surplus of this kind belongs legally to the shareholders, the consumers, in the eyes of the Commission, are entitled to share in its benefits. Following such reasoning, the board fixed the price at \$1.40 net,* thus penalizing the company for capitalizing its surplus. The board expressed the opinion that the price fixed would require either "a substantial increase of business" or a reduction in the dividends.†

* The price had been \$1.65, with special discounts to very large consumers.

† *Ninth Annual Report*, p. 9. For fifteen months after the decision the

In this case the surplus had already been indirectly, but legally, capitalized before the case was begun. On the other hand, the petition against the East Boston Company (1893) was virtually a petition of the consumers for an interest in the as yet uncapitalized surplus of about 85 per cent., one-half of which was invested in extension, the other half in interest-bearing securities. There had been no violation or evasion of law, dividends had been moderate, the management had been friendly and efficient, and prices had heretofore been considered just for both the public and private lighting. In fact, the prices for the public lighting had usually been the same as those charged by the neighboring Boston Company in very much richer territory.

In the opinion of the Commission the surplus was chiefly due, under good management, to relatively fixed prices somewhat lower than those charged by other companies similarly situated, in a community rapidly growing in wealth, population, and industry. Since there is no legal limitation of dividends, the Commission could not deny the legal right of the company to distribute this surplus in the form of dividends; but it declared that such a policy would probably prove fatal to the prosperity of the company. Therefore, on the basis of the principle already laid down, to the effect that the surplus is for the joint benefit of the consumers and the company, the Commission reduced the price from \$1.75 gross to \$1.50 net per thousand, with the statement that the surplus would insure the company against hardship in case the reduced price failed to bring sufficient increase of sales to maintain the dividend.*

Two cases against the Chelsea Company present some company maintained its usual rate of dividend,—8 per cent.,—but since that has paid but 6 per cent. annually.

* *Ninth Annual Report*, pp. 9-11. The company has maintained a 10 per cent dividend rate since, with the exception of the single year 1897, when it paid but 9 per cent.

new and interesting points of view. In 1890 the board reduced the price charged by this company to \$1.80 (with a special rate of \$1.75 for large consumers), and suggested the desirability of a reduction in the dividend, which had been at the rate of 6 per cent. This decision rested on the fact that an earlier management had, although keeping within the law, over-capitalized the company, and that the present management, while honest, was inefficient. When, three years later, the second case against this company was heard, it appeared that the previous reduction of price had not greatly increased the sales, and that profits, but not the dividend rate, had somewhat decreased. The board fixed a uniform rate of \$1.65 per thousand.

Shortly thereafter the company petitioned* for a rehearing of the case, setting forth: (1) a heavy loss by fire since the decision; (2) a large dropping off in sales, due to the business depression; (3) the necessity for more expensive improvements than were foreseen at the time of the decision; (4) a probable saving of expense, if a discount for prompt payment should be allowed; and, finally, (5) that the rate of dividend had already fallen to 5 per cent. The case was reopened; and, as a result, a maximum price of \$1.70 per thousand on all bills paid by the 25th of the month in which they are presented was approved. The Commission did not anticipate that such a price would yield more than 5 per cent. dividend. In the long run this expectation was justified. The company raised its dividend rate for that year to 6 per cent., but since that date has never paid in any one year more than 5 per cent., averaging about 4½. This low rate of dividend was

* The petition was brought under chapter 350, Acts of 1888. It was not until this act was passed that a company could initiate proceedings before the board to determine the price of gas. The price fixed by the board upon petition of a company cannot thereafter be changed except by the consent of the board. By the same statute a price fixed by the board, upon a petition of the consumers or the public authorities, cannot be raised without the consent of the board. It would appear that, when a price has been fixed at the request of a company, the company is thereby prevented from selling below cost.

brought about by the Commission when there was no charge of dishonesty or stock-watering, but on the sole ground of excessive capitalization, caused by improvident and injudicious management, chiefly at an earlier date, by a different set of managers.

The case of the Charlestown Company (1894) presented a genuine example of stock-watering. The stock in question was put out to represent "the supposed increased value of the plant" before the statutes forbade such issues. During the first fifteen years of its existence the company, notwithstanding the water in its stock, paid 8 per cent., and for the remaining twenty-seven years 10 per cent. annually. The Commission, in the belief that, under such circumstances, the rate of dividend ought to be reduced and the burden of necessary improvements placed upon the stockholders, fixed the price at \$1.40, when bills are paid promptly. The result of the decision was to reduce the annual dividend for the next three years from 10 to 6 per cent.

One of the most striking cases in regard to price was that against the Brockton Company in 1895. Through speculative management, improper leases, and absurd, if not dishonest, expenditure for patents (under arrangements entered into, however, for the most part before such practices were prohibited by statute), the company had been greatly over-capitalized. It was, nevertheless, paying about 6 per cent. annually on all its stock (\$178,500) and bonds (\$100,000). The board reduced the price of gas 28 per cent., to \$1.50, on the supposition that such a price would give a fair return on *the cost of duplicating* the plant. The board declared that "the burdens of reckless management belong to the corporation, and not to the public," and "that the profits of companies supplying this kind of public service must compare favorably with those which a new company might need to pay a fair dividend, when fully equipped to render the same service."* This de-

**Eleventh Annual Report*, p. 14.

cision went into effect at the beginning of the fiscal year 1895-96, and since that time the company has not declared any dividends.

In 1896 the Commission reduced the price charged by the Malden and Melrose Company from \$1.60 to \$1.50 per thousand feet, on the sole ground that the company had "failed to attain a high standard of efficiency," and in order to "compel the company to employ the strictest economy and the highest technical skill." This company had not only not watered its stock, but had actually issued about one-third of it "at a price much above par," and had rarely exceeded a 6 per cent. dividend. It may be inferred that the decision had the desired effect, as the usual rate of dividend has since been maintained.

By far the most interesting cases involving the question of price and surplus were those against the Haverhill Company. This company had always had a monopoly, and had always been well managed. Since 1871 it had had a share capital of \$75,000 and a constantly growing surplus. On July 1, 1894, the Commission reduced the price from \$1.40 to \$1.30 per thousand, on the ground that the company already had a surplus of about \$182,000, with an income more than sufficient to make all needed extensions and pay its regular dividend of 10 per cent. The Commission especially commended the "honorable record of the company," and, reiterating its well-established views on extension and surplus, said: "Everything which the company under discussion has taken in the past from its customers, except the cost of manufacture, including regular dividends upon its capital, is to-day existent and used for the benefit of its consumers. The stockholders from all this increase receive only a practical guaranty of a 10 per cent. dividend."

Those in control of the company did not propose to see its great surplus disappear at the hands of the Commission, nor to accept \$7,500 yearly as a satisfactory com-

pensation for the use and management of a property already worth about a quarter of a million dollars, and constantly increasing in value with the rapid growth of the city. The directors, after allowing the surplus to increase for two years more, braved public opinion, and for the years 1897-99 paid extra dividends of 3, 40, and 10 per cent. respectively. Knowing that such dividends meant appeals for further reduction of price, the owners in June, 1899, undertook to realize on the surplus in another way. They sold the stock outright for \$500,000 cash to the Haverhill Gas Securities Company, organized under the general laws of Massachusetts, apparently for no other purpose than to make a profit from the surplus of this gas company. The promoters of the Securities Company first got an option on the stock of the gas company, then organized their company, paying its capital stock (\$500,000) in cash. They next paid this cash for the stock of the gas company. Thereupon they issued a 5 per cent. loan of the Securities Company for \$500,000, putting all the property, franchises, and stock of the gas company in trust* to secure the loan. It is to be presumed that the proceeds of the loan went to replace the \$500,000 originally subscribed for the stock of the Securities Company,† leaving the bondholders of the Securities Company the only persons with any money invested in the enterprise; while the shareholders of the Securities Company had the exclusive management of the property. The tangible property of the gas company was estimated in this sale at \$425,000, and the good will at \$75,000.

In the Fifteenth Annual Report (1900), pp. 6-8, the Commission condemned this whole transaction as "a defi-

*On the question of the legality of this deed of trust under the Act of 1886, c. 346, and the anti-stock-watering acts of 1894, see pp. 26-36 of the argument of Mr. G. W. Anderson, referred to above, p. 521.

†Provision was made for a possible additional loan of \$100,000 for extensions of the gas-works.

ance of what for more than thirty years has been the well-understood policy of the state toward such corporations," and recommended that the legislature forfeit the charter of the Securities Company. Almost as soon as the existence of the Securities Company became known, the City of Haverhill asked the Commission to reduce the price of gas. The price already stood at \$1, the minimum ever reached by any company in the state, save during the stress of actual competition. Because of the relative largeness of the surplus, the speculation based upon it, the recent large extra dividends, the already low price, and the uniform rulings of the Commission on the question of surplus, the case was truly a remarkable one. The board, having in the earlier case specifically ruled on the equitable disposition of this particular surplus, and having previously condemned the Securities Company for trying to evade that ruling, was virtually compelled to maintain its previous ruling, and to fix a price that would strike a blow at the Securities Company. No half-way measure was possible. The price was fixed at 80 cents per thousand after February 1, 1900. The company promptly appealed to the courts against this action of the Commission, on the ground that the price named was unreasonable.

Whatever the outcome of this legal contest, the prestige of the Commission is likely to suffer. The Commission and the legislature, as a result of this ruling, are fairly overwhelmed with petitions for price reductions. The politicians and the voters generally in all the larger cities are not likely to consider the amount, origin, or significance of a surplus, but to demand gas as cheap as the people of Haverhill get it. Should the Commission be sustained by the courts, the pressure for a reduction of the price charged by companies less favorably situated must therefore become almost, if not quite, irresistible. On the other hand, if the court decides against the Commis-

sion, the people will lose confidence in the judgment of the Commission, while every company will contest or threaten to contest official price reductions.

Although the Commission has on one or two occasions intimated * that accumulated earnings may possibly be permitted to earn dividends at a reduced rate, it has never for a moment admitted the justice of a higher rate than 10 per cent. on the capital contributed by the shareholders. Its rulings on extensions and on surplus clearly commit it to a non-capitalization of profits and the making of extensions out of earnings. Without predicting how the court will decide this or any other particular case or expressing an opinion on the justice of the ruling of the Commission in the Haverhill case, I think it safe to say that, where so large a surplus as that of the Haverhill Company or of the Boston Company has been lawfully acquired, the owners will, in one way or another, realize an income out of it in spite of any commission or statutes. The evil is done — if it is an evil — when the surplus has been created; and, until American governments are much stronger than they now are, it is at least doubtful if any administrative body can wrest from its legal owners by price reductions so large a surplus as this, or if to do so is not to punish one set of owners for the supposed misdeeds of another set.

The foregoing account serves to make plain the origin of the Commission, and sufficiently illustrates the theory which has governed its action in regard to the price of gas.† We have seen that almost every petition for a reduction of the price has been acted upon favorably by the Commission, and that the reductions, in accordance with the expectations of the Commission, have usually reduced or even destroyed dividends. This indicates that the

* See the *Ninth Annual Report*, p. 8, and the *Tenth Annual Report*, p. 23.

† The peculiar characteristics of the reductions in the case of the Bay State and Brookline Companies should be recalled at this point. See this *Journal*, vol. xiii. pp. 300 and 307.

Commission has had an important direct effect on the price of gas in the cases brought before it. Such a policy must have had a great effect, also, in causing voluntary reductions and in preventing action of any kind on the part of the companies likely to call forth petitions for price reductions. It goes almost without saying that temptation to over-capitalization will disappear if it ever becomes clear that the Commission has the inclination and the power to prevent the payment of dividends on an excessive capitalization. In the light of the above facts, it can scarcely be questioned that the indirect influence of the Commission on the price of gas exceeds the direct effects. A good commission, like a good police force, is chiefly valuable for the evil its very existence prevents, without any action whatever on its part.

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COMPETITION, ACTUAL AND THEORETICAL.

THE word "competition" is in constant use in common speech to designate a great variety of efforts on the part of those engaged in like occupations to secure some advantage over each other. It is also freely employed in economics to express the wholesome restraint which those in the same line of business exert on each other in reference to the prices of commodities and of services and their quality. In economics, competition is opposed to monopoly, and is relied on as a ruling force by which production is harmonized with the public welfare, and the wheels of commerce made to travel together without collision in one broad thoroughfare. It has been regarded as an essential condition of progressive yet concurrent and restrained action.

The competition which prevails in business is oftentimes very different from that contemplated in economics, and may be directly hostile to it in results. The business man assumes that he has, in his methods, the justification of fundamental social laws simply because, using the same language as the economist, he designates his relation to his rivals as that of competition. For this error the economist is frequently at fault. He fails to distinguish between the use and abuse of competition, and between the very different modes of business that go by that name. He gives no definition of competition. He employs it as a word of such wide and familiar use as to require no definition. It is this very breadth and familiarity which make definition necessary, if we are not to confound under the same word forms of business as wide apart as they well can be, and utterly dissimilar in their social and ethical bearings. The competition involved in the reconciliation of productive processes is definite and restricted, and cannot be left, without great confusion, to slide into the forms of rivalry which common practice and common speech bundle together under this convenient and apologetic word.

Competition, as used in economics, should be defined in relation to the general purpose of the science, and the part as-

signed it among productive forces. Economics is the science of wealth,—its production, distribution, and exchange. The wealth contemplated is not the wealth of the individual, but the collective wealth of the community, whose various productive forces are under consideration. Economics inquires how far these activities are concurrent, and how they can best be made to minister to the general wealth. In this discussion it looks to competition as an important means of reconciling individual and collective prosperity, and subordinating the one to the other. The competition, therefore, which it contemplates and commends, is that competition, and that alone, which harmonizes all claims in and under the general wealth.

Economics assumes, without discussion, honesty in all business transactions, not because theft and fraud may not increase individual wealth, but because they cannot increase collective wealth. They are not productive agents, and they embarrass such agents in their exercise. If there are, therefore, forms of competition which tend to the general welfare, and other forms which tend against it, the first alone are recognized in political economy, and gain by means of it the force of a law. The criterion of competition, the criterion of every method of production, is its power to increase the general wealth,—its relation to harmonized industries. Competition, then, in economics is the comparison of the productive powers of different persons as expressed in prices,—prices being the direct measure of remunerative labor. The kinds of commodities and the prices of commodities define the status of each productive agent in reference to the general wealth. Competition is a simple act of comparison by which this inner relation of serviceableness is brought out. Competition is not overreaching or underreaching a rival: it is outstripping him. The productive agent who can furnish profitably to himself a superior commodity, or one better adapted to men's wants, or one of a given quality at a less price, thereby commands the market. This he does, in an economic discussion, for two reasons. The first and chief one is that in comparison with his more indolent or less intelligent competitor he increases the common wealth. The second reason is that he at the same time increases his own wealth. Economic competi-

tion must add to the general wealth : otherwise it is not among constructive forces. It must add to the individual wealth, or there is no incentive to the appropriate line of effort. Economic competition contemplates, then, as an indivisible result, the wealth of all, and the wealth of each of its agents. If either of them fail, the other fails with it. Competition in economics is simply securing an expression of productive power in its relation to the community and to the individual, and nourishing that power according to its importance. All forms of competition which are intended to promote the wealth of the individual at the expense of other individuals, at the expense of the community, can, in economics, only receive censure as obstructive of the general welfare.

Competition, therefore, that lowers the price of a commodity, not because of any superior productive power, but simply to drive a competitor from the market, is antagonistic to the law which finds enforcement in economics. In itself it is a criminal act, and should be so regarded by civil law. It has no more reference to the public welfare than theft, is as unprovoked an interference with the rights of another, and frequently inflicts a far more severe injury. Such competition is not the expression of advancing productive processes. It is not entered on for the universal reduction of prices, but for their ultimate maintenance or advancement. It is a competition that is instituted for injury, and takes effect in monopoly. It is, therefore, in its inception and completion to be repudiated by civil, economic, and social law.

Much of the unjust distribution of our times, which has brought disrepute to economics, and greatly threatens our general welfare, has arisen in connection with forms of competition which find no justification in any sound principle. It is high time that the delusive sanction of a word were withdrawn from them, and they were left to suffer the unqualified condemnation that properly belongs to them.

A very different but almost equally faulty use of the word "competition" is found in connection with the underbidding of workmen for employment. This is thought not only to be an example of true economic competition, but one that

must be maintained if we are to have reasonable wages. The trade union, in its regulation of wages, has been regarded as a combination aiming at a monopoly price. This, in a few cases, it may be, but is not ordinarily and in its primary purpose. As the notion of economic competition has been used, on the one hand, to cover up unreasonable profits, so, on the other hand, it has been employed as a means of making wages so low as to greatly reduce productive power. The acceptance of labor at lower wages by one workman as compared with another is rarely a case of economic competition. It is more frequently the result of the tyranny of unfavorable social conditions.

The workman who underbids his fellow does not do it because he is a better workman or can prosper by the lower wages: he is usually an inferior workman compared with the man whom he displaces, and in still more depressed circumstances. It is his inferiority that leaves him without occupation, and his poverty that forces him to accept it on any terms. The advantage he has over his companion is simply the induration incident to greater suffering. His underbidding, though it may seem to be immediately advantageous to himself and to the community, is not so ultimately. The workman underbidden is compelled to fall back one degree in wages. This reduction is likely soon to restore him work at the expense of his competitor. The relative position being thus regained at a lower level of prosperity, a second operation of the same order is likely to recur on the occasion of any new pressure. This form of competition simply gives the poorer workman the power and the temptation to undermine the class to which he belongs. It is the triumph of inferior thrift over superior thrift, inferior productive power over superior productive power, and that not for the permanent advantage of those who occasion it. It is decay at the bottom, not growth at the top, that is here called competition, and regarded as an economic law.

As far as the community is concerned and its collective wealth is considered, the result is unfortunate. An immediate illusory advantage, oftentimes confined to the employer, misleads the judgment. The general wealth cannot, for

any considerable period, be promoted by that which depresses the agents of production. If such a thing were possible, it would effectually disprove all harmony in economic law, and convict the science itself of a *felo de se*. The entire field of production would be one of hopeless conflict, looking to the ultimate extinction of its chief agents. Indeed, it is because of a doctrine allied to this—that wages tend to sink to bare subsistence—that political economy has suffered so much dislike and ridicule.

Wages cannot be put at the mercy of the most thriftless, and the community thrive by it. A competition that brings to the front unthrift, folly, and feebleness, is no law of production. The most productive agent must be most free in determining his own status. It is power that must give power, and that equally in the employee and employer. The primary contention for wages lies between these two, and is not to be overborne by a secondary strife between workmen themselves. Wages are to be settled by the facts of the case, and these lie between the employer and the employee. Here is where justice is to be found, and here is where it is to be sought. We are not to be deluded by a word, and to allow a spurious competition between workmen to settle the contention which lies at the basis of production. To this workmen must collectively address themselves. The army of industry is not to be disintegrated and broken up by its own contentions because we have chosen to call this intestine strife competition.

The general wealth which economics contemplates is ultimately the aggregate of individual wealth, and individual wealth can only reach the highest amount by the widest diffusion. Part must play into part, prosperity confront prosperity, consumption run an even race with production, if the primary end of labor is to be reached. This means a competition that keeps the best productive agents in the foreground, and suits their reward to the energy they have shown in the general welfare.

Competition, as an expression of productive power, lowers the price of commodities, improves their quality, and increases their adaptation to the wants of men. In doing this, it incidentally regulates the amount of production in any given

product, and puts the right man in the right place; that is, the place in which he can do the most for the general welfare and receive the most from it. This instinctive and sagacious enterprise, this wise, attentive, and universal thrust of thought in society, which is designated in economics as competition and is based on productive power, can certainly never be dispensed with. It is at once individual and collective vitality. All the more, because it is thus essential, do we need to distinguish it from those spurious and corrupt methods which now pervert the business world.

A form of competition of which we have made no mention is that of the market, sellers dropping prices to dispose of stock that is sinking in value or buyers advancing prices as means of securing a needed supply. In both cases the action is simply a recognition of circumstances, and a making of the changes of price involved in them more immediate and decisive. The losses and the gains are only expressed in the underbidding and overbidding, not caused by them. They have nothing to do with the one lesson enforced, that we are confounding transactions utterly distinct, both commercially and ethically, by our use of words, and bringing confusion to the social problems we have in hand.

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NOTES AND MEMORANDA.

THE CANADIAN BANK AMENDMENT ACT OF 1900.

At the last session of the Dominion Parliament, the Canadian Bank Act came up for the third decennial revision. Experience with the legislation of 1890 (53 Victoria, chapter 81), had not brought many defects to light, but it had suggested a number of improvements. Since the passing of that act the number of chartered banks of issue in the Dominion of Canada had fallen from thirty-nine to thirty-six. The importance of the system, the aggregate assets and liabilities of the banks, their turnover during the year, and the number and diversity of the places in which they were doing business, had greatly increased. The three banks which had fallen by the wayside were small concerns.* Each had been an example less of inadequacy in the Canadian system of regulation than of the punishment which irregular banking brings in its train. In no case did proof appear of fundamental faults in the restrictions established to protect the public or in the organization and policy of the vast majority of the banks. But the charters of all were to expire on the 1st of July, 1901, and the time of continuing powers and reasserting obligations presented the most convenient opportunity to make some changes in the law.

Whatever the diversity in point of size, race affiliations of

*The Commercial Bank of Manitoba had failed in 1893. It paid its depositors and noteholders in full. La Banque du Peuple, a company *en commandite*, and the only bank in Canada organized on that plan, was wound up in 1895. It also paid its noteholders in full; but the directors, who were under liability as unlimited as that of a copartnership, escaped by contributing \$300,000, and under the terms of a compromise the depositors received 75 per cent. La Banque Ville Marie failed in 1899. Here also the noteholders were paid in full, but the other creditors have small chance of any considerable dividend. The bank has been described by one in a position to know as "a swindle from start to finish." The general manager and the cashier are already in the penitentiary, and another officer is under suspended sentence.

officers, scene of activity and number of branches of the Canadian banks, there is a dominant or characteristic type. This is the bank with a capital of one to twelve millions, and a dozen to fifty and more branches through which it reaches out to a variety of industries in different sections, though the business is guided and overseen from a head office in one of the chief cities. In the eye of the law the banks are all alike. For each there is the double liability of shareholders, the right to issue notes as a first lien against general assets, and the duty of redeeming its notes in stated cities of the Dominion; for each the obligation to contribute to a five per cent. safety fund kept with the government, to make that fund good should the redemption of a failed bank's notes impair it, and the privilege of establishing branch offices in any part of the country. If the small local bank started long since in some Nova Scotian town does not vary its ventures or widen its activity in the same way as its wealthier colleague of Montreal or Toronto, it is not because the right is lacking, but merely that inclination fails or means do not reach. From this very heterogeneity of type, however, in connection with the racial or local peculiarities of banking in which it arose, sprang the chief needs of reform. There had been cases of both small and large banks trying to sail too close to the wind. One, and possibly more, of the newer banks had displayed a willingness to cultivate business by complaisance as to risks. In other cases, race prejudice had been used as a shield for ill-considered or deliberately speculative banking or as a screen for purposed fraud. But so well in its broader aspects, and so nearly in those less important, had the Act of 1890 stood the test that the new legislation was given the form of sundry amendments to the existing law rather than that of a thorough-going but superfluous revision.

The chief purposes in view were of two sorts. On the one hand, it seemed worth while to better the means for enforcing the general observance of high standards of banking. To specify, it was desired to insure, first, the maintenance of adequate reserves; second, the prevention of excessive, untimely, or fraudulent issue of notes; third, the disinterested and righteous management of suspended banks. There may be included

in this group, though as an innovation rather than a safeguard, the general authorization and regulation of the merger of banks. The other group of reforms consisted of minor improvements of the Bank Act's details.

To accomplish the first three of these purposes, there was an instrument already at hand. The Canadian Bankers' Association had been organized in 1892 with the intent to protect and advance, as chance might offer, the interests of the chartered banks. Its members proper were the various banks; its associate members, bank officers and clerks. Members acted through their chief executives for the time being. An executive council conducted the current affairs of the Association, and had pretty free rein in the matter of initiative. Its action, however, had always been subject to approval or veto by the whole Association at the meetings held once a year. This private organization was converted into a public corporation by a special act of Parliament, and its objects and powers defined thus: "to promote generally the interests and efficiency of banks and bank officers and the education and training of those contemplating employment in banks, and for such purposes, among other means, to arrange for lectures, discussions, competitive papers and examinations on commercial law and banking, and to acquire, publish, and carry on the *Journal of the Canadian Bankers' Association*."

The Association was empowered to establish subsections in any part of Canada, to establish a clearing house for banks in any place of the Dominion, and to make rules and regulations for the operation of such establishments, this latter power being limited by the proviso that membership in the clearing houses should be voluntary, and all members should have equal voice in making the rules and regulations. It was further provided that no rule or the like affecting clearing houses should have effect until approved by the Dominion's "Treasury Board" (a committee of high officials in the Ministry of Finance).

The fulfilment of the objects and the exercise of the powers of the Association were left in the main, as theretofore, with the Executive Council, and were declared to be subject to such norms as the council might fix. Fourteen chief execu-

tives of banks and the president and vice-president of the Association were declared to be the Executive Council, five members to constitute a quorum. But resolutions, by-laws, and rules passed by the Executive Council were given force only until approved at an intervening special or the next annual meeting of the Association; and, failing that approval, were thereafter to be of no effect.

For the full measure of the Association's powers and duties it is necessary to consult two laws. Its other functions were set forth in the Bank Act Amendment Act of 1900. This measure prescribed the Association's procedure in case of suspensions. Suspensions, it should be understood, are permitted under the Canadian laws, so long as the bank resumes within ninety days and does not stop payments for a greater period, consecutively or at intervals, within the twelvemonth. Advantage is seldom taken of this concession, but twice or more within the decade the privilege has been abused. The new act forbade a bank during such suspension to issue notes in payment of deposits, and thus to create additional prior liens against its estate. What is of far greater weight, it provided a way to take the control of the venture from those who brought it into peril. Under such by-laws as it may adopt, the Association was authorized to appoint some competent person to supervise the affairs of a suspended bank. This person, called a curator, shall "assume supervision of the affairs of the bank, and all necessary arrangements for the payment of the notes of the bank issued for circulation then outstanding and in circulation shall be made under his supervision; and generally he shall have all powers and shall take all steps and do all things necessary or expedient to protect the rights and interests of the creditors and shareholders of the bank, and to conserve and ensure the proper disposition according to law of the assets of the bank, and for the purpose aforesaid he shall have full and free access to all books, accounts, documents, and papers of the bank; and the curator shall continue to supervise the affairs of the bank until he is removed from office, or until the bank resumes business, or until a liquidator is duly appointed to wind up the business of the bank." The removal of the curator, his powers and duties, were also made subject to rules laid down by the Association.

The Association was further empowered at any meeting to make by-laws, rules, and regulations respecting "the supervision of the making of the notes of the banks which are intended for circulation, and the delivery thereof to the banks; the inspection of the disposition made by the banks of such notes; the destruction of notes of the banks; and the imposition of penalties for the breach or non-observance of any by-law, rule, or regulation made by virtue of this" grant.

These privileges were safeguarded by requiring that no by-law or rule become effective unless approved by two-thirds of the banks represented in the meeting in which action may be taken upon it, or unless the banks so approving shall have at least two-thirds in par value of the paid up capital of the members thus represented. This would seem to protect both the big and the little banks. As a third precaution, the by-law must have the sanction of the Treasury Board, the Board having previously given to each bank not a member of the Association a chance of being heard with respect to the measure. The proposals of the Association for carrying out this system of regulation are to be submitted to the Treasury Board by the 1st of January, 1901.

The fourth innovation, as to the consolidation of banks, is not an effort to reform, but merely a recognition of long-existing tendencies. The history of the past twenty years has made it plain that, within limits, the large bank is the more efficient instrument. The small bank, even on its own ground, is sometimes under appreciable disadvantage in competition with its larger rivals. Attempts to establish new banks, on the other hand, usually meet with indifferent success. The older corporations are too keen to enter new territory or to cultivate new business to leave upstart institutions a good hold at the outset or much room for later growth. The requirements as to new foundations, notwithstanding this, were left unchanged. But, in view of the known willingness of some of the smaller companies to retire from the contest in case their withdrawal were adequately requited, there was included in the Amendment Act a set of general provisions permitting and regulating the merger of banks, after agreement to that effect by the stockholders most concerned. The bargain here-

tofore cost the expense and delay of a special act of Parliament. Hereafter it will need but a willing buyer, the consent of stockholders owning at least two-thirds of the subscribed capitalization of the selling bank and the sanction of the Governor in council. This part of the law ought materially to help the owners of a merged concern in getting a proper return for what is frequently a most valuable asset,—their bank's good will.

Of the dozen and more changes of detail made in the Act of 1890, the prohibition of note issue during suspension has been noted already. Another of those which were not primarily amplifications or improvements of phrase was the section which, while safeguarding the privacy of personal accounts, imposed upon directors the duty to submit to shareholders in annual meeting such statements, in addition to the customary exhibit of assets and liabilities, as the proprietary by by-law might require. The rate of interest borne by the notes of a suspended bank from the day of its suspension to the date of payment was reduced from six to five per cent. It was provided that moneys expended from the Bank Circulation Redemption Fund for the redemption of its notes in excess of a failed bank's contribution should bear interest at three per cent. until repaid from the insolvent's estate. The term during which a bank may hold real property taken as security for debts was extended from seven to twelve years. In order better to accommodate the import trade, banks were permitted to take and to hold warehouse receipts and bills of lading as security for liabilities they might incur in behalf of persons to whom had been issued letters of credit. A yearly return of drafts and bills of exchange issued and outstanding for more than five years was required for submission to Parliament and publication in due course. As a last change, the heads under which the banks make to the government a monthly statement of assets and liabilities were amended in some particulars, partly to simplify the return, partly to bring out more clearly the volume of business done at home and that carried on in the United Kingdom and the United States.

Obviously, then, there are few salient features in the bank legislation of 1900 outside the amendments of the first group.

Mere framework of a regulative mechanism though it is, the device of incorporating the Bankers' Association and giving it power to control clearing houses, to supervise the note issue and to dictate the management of suspended banks, dominates the whole structure. Not until the bankers have filled in the detail by the necessary rules and the scheme has been tested by operation, can the efficiency of the machinery be thoroughly judged. None of the by-laws has been published, and some are still to be worked out. But it is easy to foresee that the new clearing houses which the Association may establish will not be many. It will be simpler to put those already in the Dominion's principal cities under Association rules. In these, it is likely, the bankers will find their most useful device to temper over-sanguine, imprudent, or wilful trespass against the spirit of the law, and to enforce the maintenance of adequate reserves. The requirement that the request of any bank for help should be laid before the clearing house by the member who received it would of itself have great effect. A manager who habitually ventured too far could no longer rely upon being quietly pulled out of an occasional plight by a loan from some friendly rival, obtained on necessitous borrower's terms. The prospect of going before the clearing house, suffering searching inspection of his assets, and of receiving the help, perhaps, on no other terms than that his bank be wound up, would make the reckless banker think twice of chances formerly taken without a care. In like manner the present fear that his bank's transactions in circulating notes may be passed under review and the knowledge that other bankers have full right to satisfy themselves whether he has acted within the law, must incline even an unscrupulous manager to observe the restrictions imposed upon issue. The curatorship for suspended banks ought to work in much the same way. A disinterested management of the expert sort, applied to a bank in trouble, is likely to benefit both creditors and holders of the institution's stock. If an honest management becomes the victim of an economic situation, its paths under the curator's guidance should be no more rugged than before. For bankers of another stripe the inducement to take pickings prior to suspen-

sion will dwindle under a lack of chances for later illicit gains and the prospect that previous misdeeds will be quickly discovered and punishment speedily meted out.

One and all, the regulative amendments make, or are meant to make, for stability and conservatism of banking, continuity of confidence, and the protection of the public from loss. Such ends, to be sure, appeal no less to ministries of finance than to soundly managed banks. How, then, was the government brought to delegate a portion of its supervisory powers to the very corporations against which those powers ran? To say that the Ministry, feeling that existing official organs were incompetent and none could be created, had forced the new duties upon its unwilling creatures, would be woefully incorrect. The suggestion that the Ministry had consulted bankers, and after expert advice had drafted the bills brought down, would be true in a way, but would hardly put the episode in exact perspective. Nor is it necessary too strongly to emphasize the view that the law of 1900 is merely the development of a principle adopted in 1890,—the mutual guarantee of circulating notes. There is a safety fund, and the banks must keep it good. Here they are indeed sponsors for each other towards the public, though with respect to only one item of their debts. But the liability is limited. When the fund is impaired, no bank need contribute in any year more than one per cent. of its average circulation. Besides, the fund and the banks are so well protected by the notes being a first lien on a failed bank's assets that, short of financial catastrophe, the risk is practically nothing.

The truth is, the bankers of the Dominion wanted the enactment of these measures; and both Ministry and Parliament gave substantial acquiescence to the bankers' desires. The early proposals for the reforms now enacted were drafted by the banks. To suppose that all the bankers were ardent partisans of the changes would be no less unsafe than to infer that the government was without views or that its wishes failed of expression in the measure as passed. Some of the bankers, in fact, were vehemently in favor of leaving the law much as it has been. It was merely that the preponderance of numbers, intellect, wealth, or power, was so great on the one side as to

give the appearance of a united front. Even then, no dangerous extension of privileges was obtained. Each new function was carefully hedged about, and the exercise of every power exposed to ultimate check, by the veto reserved for the Treasury Board.

After all, the bankers and the government met on more or less common ground. Both desired security and healthy growth of credit and trade,—the bankers, if for no other reason, because these conditions seemed best for stockholders' profits; the government, because they conduced to the welfare of the folk. Both were seeking to promote such desiderata by bettering, as they might, the country's institutions of credit. In so doing they have recognized a mutual responsibility of the banks far higher and broader than the duty of paying failed banks' notes. And, as the formal acknowledgment of the principal is original, so are the means for its enforcement unique. Statutory supervision of a banking system is ordinarily external; here, in part, at least, it is to be exercised from within. The Canadian banks have sought and received the right to discipline themselves.

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THE STOCK OF GOLD IN THE COUNTRY.

The amount of gold in the country, as computed by the Treasury Department, is much in excess of the amount held by the Treasury and the banks; and therefore many persons believe the amount said to be in the country is excessive. But an analysis of the figures will show that the Treasury computation of the entire stock of gold is not at all improbable.

In the first place, the disparity between the visible supply and the entire quantity is not materially larger in the case of gold coin than in the case of legal tender notes. The last report of the Comptroller of the Currency gives the amount of the different sorts of money in national banks and in all other banks, so far as it could be ascertained, on June 30, 1899. The following table is compiled from this statement and the Treasury statement of the total amounts of the several sorts of money:—

	<i>Gold coin.</i>	<i>Legal tenders.</i>
In the Treasury	\$153,522,596	\$37,046,155
In the banks	212,100,594	172,621,612
Invisible supply	489,959,865	230,531,529
Aggregate	\$855,583,055	\$440,199,296

Of the gold, nearly 18 per cent. was in the Treasury, and over 24 per cent. in the banks, the visible supply being 42.73 per cent. of the total. Of the legal tenders, 8.42 per cent. was in the Treasury, 39.21 per cent. was in the banks, the visible supply being 47.63 per cent. of the whole. This last percentage is somewhat too high. The state banks do not in all cases distinguish between legal tender notes and other money which state laws permit them to hold as reserves. If we could eliminate the other money, we should find that the percentages of legal tender notes and of gold coin in the visible supply were even nearer together.

If we eliminate the state banks, we find that the percentages of gold and of legal tenders in the Treasury and in the national banks are almost identical. Of all the gold alleged to be in the country, 34.03 per cent. is in the Treasury and the national banks; and, of all the legal tenders known to be in the country, 34.84 per cent. is in the Treasury and the national banks.

But paper money is in every one's pocket and in every merchant's till, and the invisible supply of paper is easily accounted for, while gold, it is objected, is little in circulation; and the existence of nearly \$500,000,000 of it which cannot be located is highly improbable. But it is not impossible, and a further examination will show that it is not very improbable. Gold is in much greater circulation than it was three or four years ago (the reason for which will be considered presently), and more so than can be accounted for by the increased supply of gold. Whatever error there may be in the Treasury's statement of the gold in the country, its calculation of the increase in three years cannot be far out of the way. From January 1, 1896, to January 1, 1899, the amount of gold coin in the country increased \$239,344,185, about 42 per cent. The amount of gold paid to the government for customs in New York in the fiscal year 1896 was insignificant: it was not much greater in the following year. In 1898 it was \$22,023,744, and in 1899 it was \$107,496,733. Lately the Treasury has been publishing a more interesting set of tables, giving the amount of each kind of money paid to the government at all the Treasury offices for all purposes. The amount of gold paid to the government in three fiscal years was as follows:—

1897	\$185,269,299
1898	208,304,391
1899	899,780,020

Evidently, the use of the several sorts of money depends on something besides the quantity of it in existence. The change that has occurred in the use of gold in transactions with the government is shown in the following table, which gives for

three years the percentage which each kind of money constituted in the total payments to the government:—

	1897.	1898.	1899.
Gold coin	8.40	10.03	37.76
Silver coin	3.32	4.10	3.00
United States notes	36.33	34.90	20.66
Treasury notes	9.00	7.81	5.40
National bank-notes	6.30	5.83	5.00
Gold certificates40	.13	.26
Silver certificates	36.10	37.04	27.75
Minor coin15	.16	.17
	100	100	100

It may be admitted that a good deal of this aggregate represents book-keeping rather than the actual transfer of coin. But an increase of gold in customs payments at all ports, from \$5,374,940 in 1897 to \$134,851,752 in 1899, is an actual increase in gold coin handled; and, as the fictitious receipts and disbursements of gold at the New York sub-treasury are not peculiar to 1899, the significance of the ratio of increase is not abated by making a liberal allowance for transactions where gold payments were effected on the books rather than over the counter.

It may be that most of us see no more gold than we did three or four years ago; but this only teaches us to be cautious in generalizing from our personal experience. Here is evidence of an enormous increase in the use of gold, whether we see it or not; and the increase is wholly out of proportion to the increase of the quantity in the country. If this is not a demonstration, it at least raises a strong presumption that there was a large sum of gold in the country in 1896,—very likely as much as the Treasury statement showed, although it was not circulating. It ought not to take long to recognize a reason why it did not circulate.

In the *Forum* for August, 1899, Professor R. P. Falkner concludes that a large error in the Treasury statement is proved by reports of the various kinds of money deposited in the banks, national and other, on the settling day nearest to July 1, 1896. The percentages of gold, silver, and paper which the

Treasury stated to be in the hands of the people, and the percentages deposited in 5,530 banks on the date named, were as follows:—

	<i>In the hands of the people.</i>	<i>Deposited in bank.</i>
Gold	24.6	8.3
Silver	10.2	7.3
Paper	65.2	84.4
	<hr/> 100	<hr/> 100

It seems to Professor Falkner incredible that there should be so much gold in the hands of the people, when they deposited so little. "If in the circulation of the country," he says, "gold formed 25 per cent., it must appear strange that so little of it was paid to the government for customs dues. In the aggregate customs receipts for 1897, of \$176,155,705, only \$5,437,500, or a little more than 3 per cent., was received in gold." Most of this was in San Francisco. The really singular thing is that he should have overlooked conditions in 1896 that would have explained the fact, even if no customs dues whatever had been paid in gold. It has been shown above that three years later \$134,851,752 of customs were paid in gold, and about \$900,000,000 in gold was paid to the government on all accounts. He dismisses the suggestion of hoarding thus: "Sporadic cases of miserly hoarding of coin may indeed occur; but it will hardly be credited that the intelligent American people, ever keen to make a profit, have put away over one hundred million dollars of gold, relinquishing all hope of interest upon this capital." But, if the theory of hoarding were true, it would not help the money difficulty; "for such hoarded gold cannot be considered a part of the monetary system. It would merely prove what I have contended; viz., that the available gold basis of our monetary fabric is less than is currently believed." Believing the Treasury to be in error, and unable to discover error in its method of computation, he concludes that a large amount of gold has been carried out of the country in the pockets of travellers and returning immigrants.

This reasoning is as inconclusive as the suggested solution of

the problem is improbable. When letters of credit are in general use, and immigrants are entirely familiar with the postal money order system and with the fact that steamship companies sell one pound drafts, it is highly improbable that any large amount of gold goes out of the country in pockets. If gold were hoarded, it would not be lost to the monetary system; for it was hoarded, not because we are a nation of misers,—and even the miser's gold returns to circulation when he dies,—but because of temporary conditions so patent, so conspicuous, that it is hard to understand how they should be ignored.

July 1, 1896, was about the worst date that could have been selected for estimating the amount of gold in the country by counting the number of gold dollars deposited in the banks. The Comptroller had no such purpose: he was merely continuing the studies of his predecessors in the substitution of instruments of credit for cash. For that purpose the date he selected was as good as any. But, for Professor Falkner's purpose, no date could have been worse. The country had not begun to recover from a panic which was caused by the apprehension that the government would have to pay its obligations in silver instead of gold. Four loans had been negotiated in two years and a half, to procure gold to enable the Treasury to redeem legal tender notes. In three years, from July 1, 1890, to July 1, 1893, the gold belonging to the government had been reduced \$94,746,991. In the next three years, to July 1, 1896, the gold owned by the government increased only \$6,214,191, although in the mean while the government had procured \$293,481,895 in gold by means of loans. In four fiscal years, 1893 to 1896, the Treasury paid out \$462,952,649 of gold in the redemption of its notes; yet the net export of gold, according to the Treasurer (the Bureau of Statistics makes the amount a little smaller), was only \$203,608,503. What became of the difference, if the gold were not hoarded? It was notorious that in 1893 and at subsequent times during the period of danger of silver payments there was a great increase in the demand for boxes in the safe deposit vaults. In 1891 the writer was told by a

manufacturer in a North-western state that he had been paying out \$10,000 in gold monthly to the operatives in his factory. In the December previous the bank had objected to furnishing the gold, but did so when he insisted. In January it flatly refused to supply gold, and he paid in paper and silver. The Senate had on January 14 passed a free coinage bill, which was impending in December.

On July 1, 1896, the conditions were pre-eminently favorable for the hoarding of gold. The country was on the eve of a Presidential campaign, in which it was quite certain that the Democratic party would promise the free coinage of silver, and the leaders of the Republican party were by no means united in support of the gold standard. The candidate for the Presidency had publicly denounced the attitude of the Cleveland administration towards silver; and his principal rival in the convention, who had been regarded as distinctively the sound money candidate for the nomination, had been dallying with international bimetalism as a *modus vivendi* between the two wings of his party. It is not singular that the gold in the country was kept out of circulation. Some of the gold exported may have been hoarded; that is, it may have been sent to Europe as a speculation, to be sold for silver if the country went upon a silver basis and gold went to a premium. When the Democratic party elected President Cleveland in 1884, one of the most distinguished and financially successful Democrats in the country bought a million dollars' worth of London exchange as a speculation, anticipating that the victory of his own party would depreciate the currency and send gold to a premium. I have not the permission of the Democratic senator who told me of this transaction to mention the name of the buyer of the exchange, but his name and the name of my informant are the names of two of the most distinguished leaders of the Democratic party during the past quarter of a century. But, even if the gold exported went abroad for purely commercial reasons, the enormous excess of gold payments by the Treasury in the redemption of notes over the net exports of gold, or any visible accumulations of gold, leave no doubt that gold was hoarded, as the political conditions of the

period leave no doubt that there was ample reason for hoarding it. There may have been a loss of interest; but there was a prospect of a great profit in the premium to which gold would have gone, had the government discharged its obligations in silver.

If we go back now to the various sorts of money deposited in banks on July 1, 1896, we find that the gold was \$1,868,589; and, if we take the year at three hundred business days, this indicates a deposit of \$560,000,000 of gold per annum. That is very near the mean amount of gold coin in the country during the fiscal year 1896, according to the Treasury statement. If \$19,084,598 in currency was deposited in one day, \$5,725,000,000 would be deposited in a year. The mean amount of currency in the country during the year was \$1,128,816,225. It would appear, then, that every dollar of gold was deposited once, and every dollar of currency was deposited five times. Of course, less money was deposited on July 1 than on many other days; for that is very near the dullest season of the year. It is also true that nearly all the gold deposited on that day was deposited on the Pacific coast and in the mountain region. But, if currency circulates only five times faster than gold, the fact that it is not in the Treasury and the banks on a given date need not occasion surprise or lead to the searching of passengers' pockets for the gold. If we disregard the money in the Treasury and consider only that in circulation, dividing by the amount of each the amount that would have been deposited in a year based upon the deposits of July 1, we find that the coefficient of circulation is for gold coin 1.2, for silver coin 4.4, and for paper not quite 5.9. If we think the Treasury statement of the amount of gold in the country is exaggerated, then we proportionately increase the coefficient of circulation. As a large amount of gold was disbursed in the fall of 1899 on account of the exhaustion of the supply of notes, we shall probably learn in due season that the amount of gold paid to the government in the fiscal year 1900 was much greater than the amount the year before.

Under the very different conditions now prevailing it would be most interesting to have a statement of the amount of each

kind of money deposited in the bank on a given day. The result would be quite unlike that of four years ago. But even without such an enumeration it is clear that gold was hoarded four years ago on account of the danger of silver payments; and, that danger having passed, the gold has returned to circulation.

FRED. PERRY POWERS.

NEW YORK.

PROFESSOR THOMAS NIXON CARVER, of Oberlin College, has accepted an invitation to join the academic staff of Harvard University, and will begin service at that institution in the fall of the current year. Professor Carver will act also as associate editor of the *Quarterly Journal of Economics*. Professor Carver's contributions to economic theory in periodical literature have won wide recognition, and have established his reputation as an acute and independent thinker. He is assured a cordial welcome in his new duties, alike from his associates among American teachers of economics and from the wider constituency to which the Journal is addressed.

Among the publications of the quarter, we note two that will command at once the attention of students of economics. Professor John B. Clark, of Columbia University, has issued his long-promised volume on *The Distribution of Wealth*; and Professor Gustav Schmoller of Berlin has published the first and major part of his *Grundriss der allgemeinen Volkswirtschaftslehre*. There could hardly be greater divergence in the method of treating economic principles than appears in these two volumes, the one analyzing the phenomena of the modern industrial world by abstract deductive reasoning, the other surveying the whole sweep of social and economic organization

from the historical point of view. Both will give rise to prolonged and fruitful discussion, and both mark important steps in the forward march of economic theory.

Among announcements, we note a volume of essays in economics and economic history, partly reprinted from periodicals and partly new, by Professor W. J. Ashley, in press with Messrs. Longmans; and a book on Trusts, by Professor J. W. Jenks, shortly to be issued by Phillips, McClure & Co., of New York.

In an earlier number of the current volume of this Journal* it was noted that the Swiss legislature had passed in October, 1899, an act for the compulsory insurance of workmen against sickness and accident. The referendum being called for on this measure, it was submitted to popular vote on May 20, 1900, and was rejected by an overwhelming majority,—339,000 no votes against 147,000 yes. The act had been passed in the legislature by an almost unanimous vote, and its final rejection was expected by few.

The objections urged in the discussion before the people were chiefly against the particular provision of this project, little being said against the principle involved; but they sufficed to procure its emphatic rejection.

In the spring of this year the Bank of England has added to the fiduciary or uncovered issue of notes by its Department of Issue the largest single sum—no less than £975,000—which has been authorized since the passage of the act of 1844. That act, it will be recalled, allows the bank to add to its uncovered issue an amount equal to two-thirds of the authorized notes of private or joint-stock banks whose right of issue for any reason may lapse. In recent years such lapses have been considerable, chiefly because of the repeated con-

* For February, 1900. See p. 287.

solidations of English banking houses, under which the several consolidating banks are construed to withdraw from business as independent establishments and so to forfeit their right of issue. Several years' accumulations of such withdrawals, under which £1,466,579 of private notes have been given up, have now led to the order of council of March 3, 1900, authorizing the new quota of £975,000 in the Bank of England's uncovered issue.

The additions to the Bank's fiduciary issue from this source, since the passage of the act of 1844, have been :—

1855	£475,000
1861	175,000
1866	350,000
1881	750,000
1887	450,000
1890	250,000
1894	350,000
1900	975,000
Total additions	£3,775,000
Add the original limit	14,000,000
Making the present uncovered issue	£17,775,000

RECENT PUBLICATIONS UPON ECONOMICS.

Chiefly published or announced since May, 1900.

An asterisk prefixed to a title indicates a second and more detailed notice of a book announced in a previous number.

I. GENERAL WORKS, THEORY AND ITS HISTORY.

BORCHT (R. van der). *Handel und Handelspolitik*. Leipzig: C. L. Hirschfeld. 1900. 8vo. pp. 570. 17.50 m.

[Vol. 16 in the *Hand- u. Lehrbuch der Staatswissenschaften*, now edited by M. v. Heckel. Part I.: *Begriff, Gliederung, Handelsgegenstände, Kredit, Konkurrenz*. Part II.: *Handelspolitik, innere und äussere, Begriff, Arten, Organe*.]

CLARK (J. E.). *The Distribution of Wealth. A Theory of Wages, Interest, and Profits*. New York: Macmillan Co. 1900. 8vo. pp. 473. \$3.

[This much-expected book, setting forth a "natural law" under which every agent of production tends to secure what that agent creates, will long engage the attention of economists, and will in due time receive further notice in these columns.]

COSTE (A.). *L'expérience des peuples et les prévisions qu'elle autorise. Deuxième partie de la sociologie objective*. Paris: Alcan. 1900. 10 fr.

DURCKHEIM (E., editor). *L'année sociologique. Troisième année, 1898-1899*. Paris: Alcan. 1900. 8vo. 10 fr.

[Contains articles by Ratzel on *Land, Society, and the State*; Richard on *Social Crises and Criminality*; Steinmetz on *The Classification of Social Types*. Several hundred pages of book-

notes follow, surveying the literature of 1898-99.]

*FAIRCHILD (G. J.). *Rural Wealth and Welfare. Economic Principles illustrated and applied in Farm Life*. New York: Macmillan Co. 1900. 12mo. pp. 390. \$1.25.

[A popular exposition of general economic principles, with some information and instruction addressed specially to farmers.]

FOLKMAR (Daniel). *Leçons d'anthropologie philosophique, ses applications à la morale positive*. Paris: Schleicher. 1900. 8vo. pp. 336. 7.50 fr.

[In *Bibliothèque intern. des sci. sociol.* "Proposes a new system of morals, and attempts a synthesis of all the anthropological and social sciences."]

JONES (E. D.). *Economic Crises*. New York: The Macmillan Co. 1900. 12mo. pp. 251. \$1.25.

[In the *Citizen's Library*; the author is assistant professor in the University of Wisconsin. An eclectic survey of the subject at large, not affecting to offer a new theory. The chapters consider the *Organization of Industry, the Problem of Capital, the Wage System, Legislation, Periodicity, Speculation, Psychology*. . . .]

KLEMM (Dr. Max). *Die volkswirtschaftlichen Anschauungen David Hume's*. Jena: G. Fischer. 1900. 8vo. pp. 108. 2.50 m.

[In *Conrad's Abhandlungen*. A

conscientious summary, including comparison with Adam Smith, List, Carey.]

MANTEUFFEL (Dr. C. v.). Das Sparen. Sein Wesen und seine volkswirtschaftliche Wirkung. Jena: G. Fischer. 1900. 8vo. 3 m.

SCHMOLLER (G.). Grundriss der allgemeinen Volkswirtschaftslehre. Ersterer, grösserer Teil. Leipzig: Duncker & Humblot. 1900. 8vo. pp. 492. 12 m.

[Contents: Begriff; psychologische und sittliche Grundlage; Litteratur und Methode.—Land, Leute, Technik; gesellschaftliche Verfassung. Part 2, concluding the work, is to follow shortly.]

WALTER (Dr. F.). Die Propheten in ihrem sozialen Beruf und das Wirtschaftsleben ihrer Zeit. Ein Beitrag zur Geschichte der Sozialethik. Freiburg i. B.: Herder. 1900. 8vo. pp. 304. 3.20 m.

In Periodicals.

DURCKHEIM (E.). La sociologia ed il suo dominio scientifico. Riv. Ital. di Sociol., April. [Sociology is to co-ordinate and control the theorems of the several social sciences.]

PARETO (V.). Sunto di alcuni capitoli di un nuovo trattato di economia pura. Giorn. degli Econ., June. [Concluded. On certain aspects of the theory of value; with mathematical appendix.]

SCHMIDT (G. H.). Rapports de l'économie politique avec la morale et le droit. Rev. d'Econ. Pol., April. [Discours prononcé à l'Université de Berne, 29 April, 1899.]

SMALL (A. W.). The Scope of Sociology. III. The Problems of Sociology. Amer. Journ. of Sociol., May.

II. SOCIAL QUESTIONS, LABOR AND CAPITAL.

ATKINSON (B.). Ruskin's Social Experiment at Barmouth. London: Clarke. 1900. 8vo. pp. 54. 6d.

GACHE (S.). Les logements ouvriers à Buenos-Ayres. Paris: G. Steinheil. 1900. 8vo. pp. 190. 8 fr. ["Ouvrage couronné au Concours d'hygiène" held at the National Exposition of Buenos Ayres, 1899.]

GIDE (C.). La co-opération. Conférences de propagande. Paris: Larose. 1900. 8vo. 7 fr.

HONEYMAN (J.), and others. Working-class Dwellings. London: P. S. King. 1900. 4to, illus. pp. 30. 2s. 6d.

[Papers read before the Royal Institute of Architects, April, 1900, with the discussion thereon.]

KASHIRO (Saito). La protection ouvrière au Japon. Paris: Larose. 1900. 8vo. pp. 190. 6 fr.

LAAS (L.) and ZAHN (F.). Einrichtung und Wirkung der deutschen Arbeitsversicherung. Berlin: A. Asher & Co. 1900. 8vo. pp. 224. Charts. 4 m.

[An official commemorative account, prepared for the Paris Exposition by the Imperial Insurance Bureau.]

LLOYD (H. D.). A Country without Strikes: A Visit to the Compulsory Arbitration Court of New Zealand. New York: Doubleday, Page & Co. 12mo. pp. 183. \$1. [Eulogistic account of the statute and of its working. Mr. W. P. Reeves, some time minister of labor in New Zealand, contributes an introduction.]

ROEHL (H.). Preussische Handwerkerpolitik, vom allgemeinen Landrecht bis zur Gewerbeordnung von 1845. Leipzig: Duncker & Humblot. 1900. 8vo. pp. 276. 6.40 m.

[In Schmoller's Forschungen. The legislation of 1845 was a compromise, establishing Gewerbefreiheit, but with conditions.]

RUTTEN (Rév. Père). Nos grèves houillères et l'action socialiste. Paris: Guillaumin. 8vo. 5 fr.

SAINT-AUBERT (G. de). L'assurance contre l'invalidité et la

- vieillesse en Allemagne. Paris: Larose. 1900. 8vo. 12 fr.
- VARIOUS. Houses for the Working Classes. London: P. S. King. 1900. 8vo. pp. 48. 1s.
- [Papers read before a National Conference in 1900, by C. Edwards and others; with a select bibliography by Sidney Webb.]
- VIRGILI (F.). La co-operazione nella sociologia e nella legislazione. Milan: Hoepli. 1900. 8vo. pp. 388. 1.50 l.
- [Co-operation examined in its various forms, including profit-sharing; concluding with a detailed account of Italian legislation affecting it.]
- WALCKER (Dr. Karl). Der Schutz der Frauen u. Kinder gegen Miss-handlungen. Auf Grund amerik. u. europ. Materialien erörtert. Leipzig: Rossberg & Berger. 1900. 8vo. pp. 128. 4 m.
- WALDECK-ROUSSEAU. Questions sociales. Paris: Fasquelle. 1900. 18mo. pp. 390. 3.50 fr.
- ZWIEDENECK-SÜDENHORST (O. v.). Lohnpolitik und Lohntheorie, mit bes. Berücksichtigung des Minimallohns. Leipzig: Duncker & Humblot. 1900. 8vo. 10 m.
- [Announced.]
- In Periodicals.*
- FLACH (J.). Les institutions primitives. Les origines de la famille: le levirat. Annales des Sci. Pol., May.
- FRANKENBERG (H. v.). Die Versicherung der landwirthschaftlichen Arbeiter. Ann. des Deutsch. Reichs, 33, No. 5 & 6. [The need and feasibility of extending compulsory insurance to agricultural laborers.]
- JOHN (V.). Die italienischen Arbeiterkammern und deren Bedeutung für die nationale Produktivität. Jahrb. f. Nat. Oek., 19, Heft 4. [Descriptive account of the aims and history of these organizations. To be continued.]
- MCPHERSON (J. B.). Voluntary Conciliation and Arbitration in Great Britain. Bulletin Dept. of Labor, May. [Arranged by industries; the experience in the several trades being described, and the texts of agreements reproduced.]
- MISCHLER (E.). Grundzüge einer allgemeinen Arbeitsvermittlung in Oesterreich. Archiv f. Soz. Gesetzg., 15, Heft 8. 4. [Current Austrian legislative proposals described and advocated.]
- TUCKWELL (G. M.). The Government Factory Bill of 1900. Fortnightly, June.
- WILLOUGHBY (W. F.). Foreign Labor Laws. Bulletin Dept. of Labor, May. [Continued; Austria in this instalment.]

III. SOCIALISM.

- BOTTGER (Hugo). Die Sozialdemokratie auf dem Lande. Ein Beitrag zur deutschen Agrarpolitik. Leipzig: Diederichs. 1900. 8vo. pp. 155. 2 m.
- *BRASSEUR (A.). La question sociale. Études sur les bases du collectivisme. Paris: F. Alcan. 1900. 8vo. pp. 464. 7.50 fr.
- [Contents: Equality, Individualism, Altruism; the Family and Property; Marx, Lassalle, Malon; Co-operation and State Action; Collectivism historically. The conclusion is against collectivism, looking to gradual social evolution in the direction of "simplicité et dématérialisation."]
- HYNDMAN (F. H.). Time of Transition, or Hope of Humanity. London: New Century Press. 1900. 8vo. pp. 446. 6s.
- MAISONABE (E.). La doctrine socialiste. Paris: R. Poussielgue. 1900. 18mo. pp. 266. 2.50 fr.
- PESCH (H.). Der moderne Socialismus. Freiburg i. B.: Herder. 1900. 8vo. pp. 606. 4.60 m.
- [Dritter (Schluss) Theil of the book on Liberalismus, Socialismus, und christliche Gesellschaftsordnung, which has been

appearing in parts. The author is a Jesuit: the book gives the Catholic view of social problems.]

STEFFENS-FRAUWEILER (H. v.). Der Agrarsocialismus in Belgien. Stuttgart: Cotta. 1900. 8vo. pp. 106. 2.40 m.
[No. 36 in Münchener Volksw. Studien.]

In Periodicals.

LORENZ (Max). Die Ethik im

Marxismus. Preus. Jahrb., Vol. 100, Heft 3. [Das Marx'sche System ist ein unorganisches Scherhengemenge, das der Hegelianer, Feuerbachianer, und Materialist Karl Marx von überall her recht kunst- und verständnislos ausgebrochen hat.]

PARETO (V.). Le péril socialiste. Journ. des Écon., May. [Chiefly condemning forms of government action deemed socialistic.]

IV. LAND.

CHLAPOWO-CHLAPOWSKI (A. v.). Die belgische Landwirtschaft im 19. Jahrhundert. Stuttgart: Cotta. 1900. 8vo. pp. 184. 4 m.
[No. 37 in Münchener Volksw. Studien.]

In Periodicals.

FRINGSHEIM (O.). Landwirtschaftliche Manufactur und elektrische Landwirtschaft. Archiv f. Soz. Gesetzg., 15, Heft 3, 4. [Great

changes toward "capitalism" expected from the equipment of agricultural machinery with electric power.]

VANDERVELDE (E.). Das Grundeigentum in Belgien in dem Zeitraum 1834-1899. Archiv f. Soz. Gesetzg., 15, Heft 3, 4. [Concentration of ownership, divorce of laborer from the land, proceed apace: the Marxian laws thought to be thus exemplified.]

V. POPULATION, EMIGRATION, AND COLONIES.

GOLDSTEIN (Dr. I.). Bevölkerungsprobleme und Berufsgliederung in Frankreich. Berlin: J. Gutentag. 1900. 8vo. pp. 223.
JOHANNIS (A. J. de). A proposito del libro di E. Zola "Fecondità." Florence: tip. Frat. Bencini. 1900. 12mo. pp. 87.

[The editor of L' Economista here reprints from that weekly articles on Zola's novel, setting forth his own views on the Malthusian question.]

NEUMANN (Dr. H.). Die unehe-lichen Kinder in Berlin. Jena: G. Fischer. 1900. 8vo. pp. 84. 2 m.

VIGNON (L.). L'exploitation de notre empire colonial. Paris: Hachette. 1900. 16mo. 3.50 fr.

In Periodicals.

ANTON (G. K.). Domanial- und

Landpolitik des Kongostaates. Jahrb. f. Gesetzg., 24, Heft 2. [A pendant to this writer's survey of recent Dutch policy in Java, in the last volume of the same journal.]

DAY (Clive). Experience of the Dutch with Tropical Labor. II. Abolition of the Culture System and Transition to Free Labor. Yale Rev., May.

[Concluding instalment of an excellent pair of papers.]

FLUX (A. W.). Internal Migration in England and Wales, 1881-1891. Econ. Journ., June. [A net movement of a million persons: most markedly out of rural districts and into suburban districts.]

KAMMANN (Wilhelm). Das Geschlechtsverhältniss der Ueberlebenden in den Kinderjahren, eine selbstständige Massenkonstante. Jahrb. f. Nat. Oek., 19, Heft 3.

VI. TRANSPORTATION AND EXCHANGE.

HAFTER (Dr. Ernst). Die schweizerische Eisenbahnrente. Zürich: E. Rascher. 1900. 8vo. pp. 123. 2.20 m.

[Rechtlich u. wirthschaftlich dargestellt u. verglichen m. verwandten Institutionen anderer Länder.]

LOTZ (Prof. W.). Verkehrsentwicklung in Deutschland 1800-1900. Leipzig: Teubner. 1900. 8vo. pp. 142. .90 m.

[Six popular lectures, on railways and waterways, freight and passenger charges, and economic effects.]

RENAULD (J. v.). Der Bergbau und die Hüttenindustrie von Oberschlesien 1884-1897. Stuttgart: Cotta. 1900. 8vo. pp. 428. 9 m.

[In Münchener Volksw. Studien. "Eine Untersuchung über die Wirkungen der staatlichen Eisenbahnpolitik und des Wasserverkehrs." With charts and a map.]

SABBATINI (L.). Per le nostre esportazioni. Milan: A. Vallardi. 1900.

[Comparison of Italy's declining international trade since 1872 with that of other countries, with diagrams. Changes in the organization of export trade proposed as a remedy.]

SIMMONS (W. E.). The Nicaragua Canal. New York: Harpers.

1900. 8vo. pp. 335. Illus. \$1.25.

[A brief description of Nicaragua and of the proposed canal, with illustrations; addressed to the general public, and with little attention to economic aspects.]

SUPINO (Camillo). La navigazione dal punto di vista economico. Seconda edizione interamente rifatta. Turin: Unione tipogr. editr. 1900. 8vo. pp. 124. 3 l.

[Published in the Biblioteca dell' Economista. An excellent account of the changes of the nineteenth century; the transition from sail to steam; analysis of economic aspects; concluding examination of navigation laws and shipping subsidies, in general unfavorable. The first edition was published in 1890 by the Rivista Marittima of Rome.]

In Periodicals.

MCLEAN (Simon J.). Federal Regulation of Railways in the United States. Econ. Journ., June. [A general summary of the working of the Interstate Commerce Act.]

NEWCOMB (H. J.). Railway Progress and Agricultural Development. Yale Rev., May. [Their close relation in the United States set forth; with many statistical tables.]

VII. INTERNATIONAL TRADE AND CUSTOMS LAWS.

AUBERT (G.). À quoi tient l'infériorité du commerce français? Comment y remédier. Paris: Flammarion. 1900. 16mo. pp. 331. 3.50 fr.

BÉRAUD (V.). L'Angleterre et l'impérialisme. Paris: Colln. 1900. 18mo. 4 fr.

[Contains chapters on Free Trade and Protection, Panbritanism, Joseph Chamberlain.]

LAIVISON (A.). La protection par les primes. Paris: Rousseau. 1900. 8vo. pp. 344.

[On the French bounties to shipping, silk, flax, hemp, exported sugar. "Bounties are a remedy which may give good results: happy the country which can dispense with them."]

LOTZ (Prof. W.). Der Schutz der deutschen Landwirtschaft und die Aufgaben der künftigen deutschen Handelspolitik. Berlin: L. Simon. 1900. 8vo. pp. 67. 2 m.

[In Vorträge u. Abhandlgn. hrsg. v. der volkswirthschaftl. Gesellschaft in Berlin.]

SCHAYÉ (P. A.). *Marine marchande. Primes et subventions.* Paris: Fontemoing. 1900. Svo. pp. 204. 3.50 fr.

In Periodicals.

BÜRGEI (M.). *Russisches Getreide.* Jahrb. f. Gesetzg., 24, Heft 2. [The probable effect upon Germany of future competition in grain between America and Russia, after the opening up of Siberia.]

DIEHL (Karl). *Ueber die Frage der Einführung beweglicher Getreidezölle beim Ablauf der bestehenden Zölle.* Jahrb. f. Nat. Oek., 19, Heft 3. [Argues against the proposed sliding scale, on the strength of Great Britain's experience in the first part of the century.]

MULHALL (M. G.). *Imports and Exports of Forty Years.* Contemp., May.

VIII. MONEY, BANKING, CREDIT, AND PRICES.

BIDWELL (W. H.). *Annals of an East Anglian Bank: History of the Norwich and Norfolk Bank.* Norwich: Goose. 1900. 4to. pp. 400. Illus. 12s. 6d.

DESLOGES (H.). *Épargne et crédit populaires à l'étranger et en France.* Paris: A. Rousseau. 1899. Svo. pp. 358. 7.50 fr.

[Examination of savings-banks and of co-operative credit societies in various countries; concluding that the French system of rigid State control is bad.]

LABRIOLA (A. F.). *Discussioni teoretiche su alcuni punti della dottrina della moneta.* Rome: Loescher. 1900. Svo. pp. 141. 1.50 l.

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[“An Exposition of the Function of Money as the Measure of Contract, Trade, and Government, viewed from the Principles of Natural Philosophy and Jurisprudence, in Refutation of Economic Dogmas.”]

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CONRAD (J.). *Die Entwicklung des Preisniveaus in den letzten Dezennien und der deutsche Getreidebedarf in den letzten Jahren.*

Jahrb. f. Nat. Oek., 19, Heft 4. [Continued from volume 17.]

DARLING (J. F.). *The Currency of India.* Journ. Inst. of Bankers, April. [History, present position, proposed State Bank.]

FOWLER (W.). *Banking Reserves.* Journ. Inst. of Bankers, May. [Once more a discussion of slender cash reserves; but “hard-and-fast rules” disapproved, and no remedy mentioned.]

LÉVY (R. G.). *L'achèvement de notre réforme monétaire. L'étalon d'or.* Rev. Polit. et Parlem., March. [Proposing the unqualified gold standard for France and the Latin Union.]

MAYO-SMITH (R.). *Money and Prices.* Polit. Sci. Quarterly, June. [“The quantity theory has no adequate title for a scientific explanation of the process of price-making.”]

OTTO-WARSCHAUER. *Statistik und volkswirtschaftliche Bedeutung des Lombardgeschäfts.* Finanz-Archiv, 17, Band 1. [Brief summary as to the great banks of Europe.]

SAYOUS (A. E.). *Les opérations en participation et les émissions de valeurs.* La bourse moderne et sa loi d'airain. Rev. d'Econ. Pol., Mai. [This iron law is that the return for the investor (rentier) tends to a minimum.]

IX. FINANCE AND TAXATION.

- BLOCH (Jean de).** Les finances de la Russie au XIX^e siècle. Historique et statistique. Paris: Guillaumin. 1899. 2 vols. 8vo. pp. 267 and 317. 8 fr.
[A narrative and statistical account of Russian finances mainly during the present century, prefaced by a brief study of earlier periods.]
- FEITELBERG (Dr. D.).** Die Einkommenbesteuerung nicht physischer (juristischer) Personen. Jena: G. Fischer. 1900. 8vo. pp. 191. 4 m.
[In Elster's Staatsw. Studien. The situation in Germany examined, with regard, among other topics, to that of double taxation.]
- NITTI (F.).** Il bilancio dello Stato dal 1862 al 1896-97. Prime linee di una inchiesta sulla ripartizione territoriale delle entrate e delle spese pubbliche in Italia. Naples: Società Co-op. tip. 1900. Folio. pp. 500. 25 l.
[Reprinted for the author from the Atti del R. Istituto d'Incoraggiamento di Naples. An elaborate investigation, with numerous charts and tables.]
- STEPHAN (F.).** Die 25 jährige Thätigkeit der Vereinigung der Steuer- u. Wirtschafts-Reformer (1876-1900). Berlin: Allgemeine Verlags-Agentur. 1900. 8vo. pp. 159. 2 m.
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- VOLTA (Riccardo dalla).** La riforma delle tributi locali, a proposito dell'opera: La riforma delle leggi sui tributi locali di C. A. Conigliani. Florence: frat. Bencini. 1899. 8vo. pp. 152.
[Articles reprinted from L' Economista.]
- tax Clause of the Federal Constitution. Polit. Sci. Quarterly, June. [First article, discussing the proceedings in the constitutional convention.]
- EDGEWORTH (F. Y.).** The Incidence of Urban Rates. Econ. Journ., June. [First part of a keen analysis, based on the late blue book on Taxation, and following its order of inquiry.]
- FÖLDES (B.).** Ueber Matrikular- und Quotenbeiträge, mit bes. Rücksicht auf dem österr.-ungarischen Quotenstreit. Finanz-Archiv, 17, Band 1. ["Zugleich ein Beitrag zum internat. Finanzwesen und zur Messung des Volkswohlstandes." England and Ireland; Swiss Cantons; Sweden and Norway; Germany; finally and in detail, Austro-Hungary.]
- HECKEL (Max v.).** Die Veranlagung der Einkommen- und Ergänzungsteuer in Preussen für 1898 und 1899, 1897-98 und 1899-1901. Jahrb. f. Nat. Oek., 10, Heft 5. [Continued from vol. 17; based on an official Denkschrift.]
- KAUFMANN (R. v.).** Einige Bemerkungen zu den preussischen Budgets seit 1880. Finanz-Archiv, 17, Band 1. [Payment of the public debt found to be inadequately provided for in these budgets; the French situation more satisfactory in this regard.]
- SCHANZ (G.).** Studien zur Geschichte und Theorie der Erbschaftsteuer. Finanz-Archiv, 17, Band 1. [I. Im Alterthum; II. Im Mittelalter; III. Nach Ausgang des Mittelalters (to circa 1700). To be continued.]
- THIRÄN (W.).** Zur Entwicklung der "Etats für die Verwaltung des deutschen Reichsheeres," mit besonderer Rücksicht auf die Etats-technik. Ann. des Deutsch. Reichs, 33, No. 6. [From 1653 to the present time. To be concluded.]

In Periodicals.

- BULLOCK (C. J.).** The Origin, Purpose, and Effect of the Direct-

X. HISTORY, BIOGRAPHY, AND DESCRIPTION.

- ASBACH (Dr. J.). Deutschlands-gesellschaftliche u. wirtschaftliche Entwicklung. Ein Grundriss f. Lehrer u. Studierende. Berlin: Weidmann. 1900. 8vo. pp. 143. 2.80 m.
- BAKER (Ray Stannard). Our New Prosperity. New York: Doubleday, Page & Co. 1900. 12mo. pp. 285. \$1.25.
[On the revival of activity in the United States, 1898-1900: a useful summary, though not rising much above newspaper level.]
- BARD (E.). Les chinols chez eux. Paris: Colin. 1899. 12mo. pp. 360. Illus. 4 fr.
[The author, a merchant in China, describes more especially agriculture, finances, money, and other economic aspects.]
- BRY (Georges). Histoire industrielle et économique de l'Angleterre depuis les origines jusqu'à nos jours. Paris: Larose. 1900. 8vo. 15 fr.
- DEISS (E.). Études sociales et industrielles sur la Belgique. Brussels: Lebbeque; Paris: Guillaumin. 1900. 8vo. pp. 328. Illus. 3.50 fr.
[A description of some of the principal industrial establishments of Belgium.]
- DENIKER (J.). Les races et les peuples de la terre. Éléments d'anthropologie et d'ethnographie. Paris: Schleicher. 1900. 12mo. 12.50 fr.
[The author is the well-known anthropologist.]
- EBERSTADT (K.). Der Ursprung des Zunftwesens und die älteren Handwerkvverbände des Mittelalters. Leipzig: Duncker & Humblot. 1900. 8vo. pp. 201. 5 m.
[In Schmoller's Forschungen.]
- GARNAULT (E.). Le commerce rochelais au XVIII^e siècle. Paris: Challamel. 1900. 8vo. 10 fr.
[The fifth volume, covering 1763-1790, of a series that deals with the trade of La Rochelle.]
- HÉLOT (Jules). Le sucre de betterave en France de 1800 à 1900. Cambrai: impr. F. & P. Deligne. 1900. 4to. pp. 220. Charts and illustr.
[The author is secretary of the association of beet-sugar manufacturers; the book an elaborate survey of the industry by an expert, favoring the maintenance of the bounty system, but demanding reduction in the excise tax.]
- JENKS (E.). A History of Politics (The Temple Primers). London: Dent; New York: Macmillan. 1900. 8vo. pp. 174. 50 cts.
[A most useful survey of the history of political institutions, arranged under the three "types" of savage, patriarchal, and modern (political) societies.]
- LEROY-BEAULIEU (Pierre). La rénovation de l'Asie. Paris: Colin. 1900. 18mo. pp. 507. 4 fr.
[Personal observations of economic and political changes taking place in Siberia, China, and Japan.]
- LLOYD (H. D.). Newest England: Impressions of a Democratic Traveller in New Zealand and Australia. New York: Doubleday & McClure. 12mo. Illustrated. \$2.50.
[Announced.]
- LOHMANN (F.). Die staatliche Regelung der englischen Wollindustrie vom XV. bis zum XVIII. Jahrhundert. Leipzig: Duncker & Humblot. 1900. 8vo. pp. 100. 2.60 m.
[In Schmoller's Forschungen.]
- LOZE (Ed.). Les charbons britanniques et leur épuisement. Paris: Béranger. 1900. 2 vols. 8vo. pp. 1200. 25 fr.
[A work of much erudition, treating of what the author regards as the material basis of the power of Great Britain, its history and its probable future. The conclusion is that "between 1850 and 1860 the exceptional advantages which the Britannic coal mines have created for the marine, for industry, and for commerce, will tend to disappear."]

NOSTITZ (Hans v.). Das Aufsteigen des Arbeiterstandes in England. Ein Beitrag zur sozialen Geschichte der Gegenwart. Jena: G. Fischer. 1900. 8vo. pp. 831. 18 m.

RHYS (J.) and BRYNMOR-JONES (D.). The Welsh People: Chapters on their Origin, History, Laws, Language, Literature, and Characteristics. With 2 maps. London and New York: Macmillan. pp. 704. \$4.50.

[Consists partly of extracts from the Report of the Royal Commission on Land in Wales, and partly of additional matter, and contains a chapter by Mr. Frederic Seebohm on the history of land tenure in Wales.]

SOMMERLAD (Priv.-Doz. Theo.). Die wirtschaftliche Thätigkeit der Kirche in Deutschland. Leipzig: J. J. Weber. 1900. 4to. pp. 366. 20 m.

[Vol. I.: Naturalwirtschaftliche Zeit bis auf Karl den Grossen.]

VESTRAETE (M.). Études industrielles russes. L'Oural. Paris: Hachette. 1899. 8vo. pp. 262.

[A study by a member of the French consular service of the resources and industries of the Ural district.]

In Periodicals.

BALLOD (C.). Deutschlands wirtschaftliche Entwicklung seit 1870. Jahrb. f. Gesetzg., 24, Heft 2.

BLONDEL (G.). Les transforma-

tions économiques de la Russie. Rev. d'Econ. Pol., April. [A review of Schulze-Gaevernitz' Volkswirtschaftliche Studien aus Russland.]

KULISCHER (Josef). Zur Entwicklungsgeschichte des Kapitalzinses. Jahrb. f. Nat. Oek., 19, Heft 4 and 5. [Continued and concluded from volume 18. Das mittelalterliche Handwerk und die Hausindustrie des 16-18 Jahrhunderts. Interest in this period first found to flow into the hands of a "non-producing" middleman.]

SCHMOLLER (G.). Neuere deutsche Litteratur über die Hausindustrie. Jahrb. f. Gesetzg., 24, Heft 2. [A very brief but useful survey of recent publications.]

SWAINE (A.). Einige Bemerkungen über des Wesen der Hausindustrie. Jahrb. f. Gesetzg., 24, Heft 2. [A criticism of Liefmann's recent book.]

WEIDENFELD (K.). Die Organisation des deutschen Getreidehandels und die Getreidepreisbildung im 19. Jahrhundert. Jahrb. f. Gesetzg., 24, Heft 2.

ZIMMERMANN (Finanzerath Dr. F. W.). Gewerbe und Handel im deutschen Reich, nach der gewerblichen Betriebszählung vom 14 Juni, 1895. Ann. des Deutsch. Reichs, 33, No. 7.

UNSIGNED. Partition of the Western Pacific. Edinb. Rev., April. [A survey of recent international arrangements.]

XI. STATISTICS.

FRANCE, DIRECTION DU TRAVAIL. Résultats statistiques du dénombrement de 1896. Paris: Impr. Nationale. 1899. 8vo. pp. 481.

[The results in detail of the census of 1896: with introductions and 13 charts.]

In Periodicals.

HIRSCHBERG (E.). Die Aufgaben der am 1. Dezember 1900 bevorstehenden Volkszählung. Jahrb. f. Gesetzg., 24, Heft 2.

KOLLMANN (P.). Die sociale Zusammensetzung der Bevölkerung im Deutschen Reiche. Jahrb. f. Gesetzg., 24, Heft 2. [Conclusion of a pair of articles based on the census of occupations of 1895.]

RICHTER (O.). Die Grundlagen der Handelsstatistik einiger fremder Staaten. Ann. des Deutsch. Reichs, 33, No. 7. [Description by an official, in the German Statistical Bureau, of the collection of trade statistics in Austria.]

XII. REPRINTS, TRANSLATIONS, AND NEW EDITIONS.

- AMMON (O.). *L'ordre social et ses bases naturelles. Esquisse d'une anthroposociologie.* Paris: Fontemoling. 1900. 8vo. pp. 543. 10 fr.
- [The translator is H. Muffang.]
- BAMBERGER (Ludwig). *Ausgewählte Reden und Aufsätze über Geld- und Bankwesen. Im Auftrage des Vereins zum Schutz der deut. Goldwährg. hrsg. v. Karl Helfferich.* Berlin: Guttentag. 1900. 8vo. pp. 159. 3 m.
- [No. 1 in Schriften des Vereins zum Schutz der deutschen Goldwährung.]
- CHALMERS (T.). *Charity. Selections of Passages and Scenes to illustrate his Social Teaching and Practical Work. Arranged by N. Masterman.* London: Constable. 1900. 8vo. 7s. 6d.
- GOLOWNI (K.). *Die finanzielle Politik Russlands u. die neue Goldwährung.* Berlin: A. Deubner. 1900. 8vo. pp. 117. Plate. 1.80 m.
- [Translated from the Russian.]
- KAIZL (Dr. Jos.). *Finanzwissenschaft.* Vienna: Manz. 1900. 8vo. pp. 213. 2.80 m.
- [Part I. only. Translated from the Bohemian by A. Körner.]
- LIBERATORE (le Père Matteo). *Principes d'économie politique.* Paris: Oudin. 1900. 12mo. pp. 562. 3.50 fr.
- [Translated from the Italian by Baron Silvestre de Sacy. The first Italian edition was published in 1889.]
- SCHMOLLER (G.), SERING (M.), and WAGNER (A.), editors. *Handels- und Machtpolitik. Reden und Aufsätze.* Stuttgart: Cotta. 1900. 2 vols. 8vo. pp. 208, 246. 1, 1.20 m.
- [Reprinted papers on the mooted question, by the editors and by others.—K. Lamprecht, R. Ehrenberg, E. Francke, E. Halle. . .]

XIII. NOT CLASSIFIED.

- CONYNGTON (P.). *The Organization and Management of a Business Corporation.* Rochester, N.Y.: Lawyers' Co-op. Publ. Co. 8vo. \$1.50.
- [A handbook for lawyers and business men, chiefly concerning laws of incorporation in New York, New Jersey, Delaware, and West Virginia.]
- DECHESNE (L.). *L'expansion économique de la Belgique.* Brussels: Weissenbruch; Paris: Larose. 1900. 8vo. pp. 71. 1.50 fr.
- [Foreign investments, colonial policy, merchant marine, discussed as forms of expansion; concluding with hope for "le réveil de l'esprit national."]
- GRINNELL (W. M.). *The Regeneration of the United States. A Forecast of its Industrial Evolution.* New York: Putnam's. 1900. 12mo. pp. 150. 75 cts.
- [A great foreign war is supposed to result in the loss of the new dependencies, the downfall of trusts and monopolies, and a regeneration, through a system of co-operation, whose outcome is a delightful social and economic system.]
- HAMMESFAHR (F.). *Le commerce des grains et les marchés à terme en rapport avec les problèmes sociaux.* Paris: Guillaumin. 1899. 18mo. pp. 115. 3 fr.
- KLIMBURG (Rud. v.). *Die Entwicklung des gewerblichen Unternehmertums in Oesterreich.* Tübingen: J. C. B. Mohr. 1900. 8vo. pp. 248. 7 m.
- [In Wiener staatswissenschaftliche Studien.]
- LUBIN (David). *Let there be Light. The story of a workingmen's club; its search for the causes of poverty and social inequality, its discussions, and its plans for the amelioration.*

- ration of existing evils. New York: G. P. Putnam's Sons. 1900. 12mo. pp. 256. \$1.50.
- WAENTIG (Heinrich). Gewerbliche Mittelstandspolitik. Leipzig: Duncker & Humblot. 1890. 8vo. pp. 483. 9.60 m.
[Eine rechtshistorische-wirtschaftspolitische Studie auf Grund österreichischer Quellen.]
- In Periodicals.*
- CLARK (J. B.). Trusts. Polit. Sci. Quarterly, June. ["Give to potential competition greater effectiveness" by legislation "giving to every purchaser the benefit of the lowest prices."]
- COHN (Gustav). Ueber die staatswissenschaftliche Vorbildung zum höheren Verwaltungsdienste in Preussen. Archiv f. Eisenb., May, June. [Persons having a taste for economics are unable to give time to it, if preparing for public service; hence of late have turned to work for chambers of commerce, corporations, and the like.]
- GIFFEN (R.). Some Economic Aspects of the War. Econ. Journ., June. [On the effects (1) in South Africa, (2) in Great Britain, (3) on finances; the economic disturbance being on the whole not great in proportion to the resources of the British Empire.]
- JÄH (W. C.). Die Grossbazare und Warenhäuser, ihre Berechtigung und ihre Besteuerung. Jahrb. f. Gesetzg., 24, Heft 2.
- KERSHAW (J. B. C.). Joint Stock Enterprise and our Manufacturing Industries. Fortnightly, June.
- MALTBIE (M. R.). Glasgow's Municipal Tramways. Municipal Affairs, March. [A survey of the entire experience since 1870, based partly on a visit to Glasgow in 1890.]
- MYERS (G.). History of Public Franchises in New York City. Municipal Affairs, March. [An extended historical survey, covering Ferries, Water, Gas, Street Railways, Rapid Transit. Also reprinted separately by the Reform Club.]
- UNSIGNED. The Reform of Company Law. Quarterly Rev., April. [A review of recent reports of a Committee of the English House of Lords, and of a Departmental Committee of the Board of Trade.]

APPENDIX.

STATISTICS ON PIG IRON.

TABLE I.

PRODUCTION, IMPORTS, AND EXPORTS OF PIG IRON.

<i>Calendar Years.</i>	<i>Production.</i>	<i>Imports.</i>	<i>Exports.</i>
1870	1,685,179		
1871	1,706,793	212,228	2,097
1872	2,548,713	264,256	1,329
1873	2,500,963	138,132	9,092
1874	2,401,263	54,612	14,320
1875	2,023,733	74,089	7,864
1876	1,868,961	74,171	3,424
1877	2,066,594	59,697	6,918
1878	2,301,215	66,504	2,957
1879	2,741,853	304,171	1,153
1880	3,835,191	700,864	1,886
1881	4,144,254	465,031	6,207
1882	4,623,323	540,159	5,620
1883	4,595,510	322,648	3,798
1884	4,097,868	184,209	3,870
1885	4,044,526	146,740	6,277
1886	5,683,329	361,768	8,919
1887	6,417,148	467,522	6,850
1888	6,489,738	197,237	14,489
1889	7,603,642	148,759	13,681
1890	9,202,793	134,955	16,471
1891	8,279,870	67,179	14,946
1892	9,157,000	70,125	15,427
1893	7,124,502	54,394	24,587
1894	6,657,388	15,582	24,482
1895	9,446,308	53,232	26,164
1896	8,623,127	56,272	62,071
1897	9,652,680	19,212	262,686
1898	11,773,934	25,152	253,057
1899	13,620,703	40,372	228,678

TABLE II.

PRICES OF PIG IRON IN THE UNITED STATES AND IN GREAT BRITAIN.

The prices here given are of grades fairly comparable, at the works in the United States (Pittsburg) and in Great Britain. The figures have been obtained chiefly from the publications of the American Iron and Steel Association, but have been supplemented by comparison with the British Iron Trade Association Reports. The quotations are of average prices for the several years, hence to be used with caution, since great fluctuations may take place in the course of a single year (thus in 1880, 1890, 1899). But they suffice for the illustration and verification of the conclusions stated above on pages 475-485.

AVERAGE ANNUAL PRICES OF CORRESPONDING GRADES OF PIG IRON.

Year.	Gray forge pig iron at Pittsburg (U.S.).	Cleveland pig iron (f. o. b.) No. 3 (Great Britain).	Bessemer pig iron at Pittsburg (U.S.).	West Coast Bessemer (f. o. b.) (Great Britain).
1873	\$35.80	\$27.95		
1874	27.16	18.13		
1875	23.67	14.61		
1876	21.74	12.86		
1877	20.00	11.06		
1878	18.00	10.28		
1879	22.15	10.02		
1880	27.98	12.26		
1881	22.94	9.47		
1882	23.84	10.58		
1883	19.04	9.55		
1884	17.17	8.87		
1885	15.27	7.99		
1886	16.58	7.43	\$18.96	\$10.60
1887	19.02	8.27	21.37	11.22
1888	15.99	7.93	17.38	10.86
1889	15.37	10.60	18.00	12.68
1890	15.78	11.64	18.85	13.80
1891	14.06	9.76	15.95	11.80
1892	12.81	9.33	14.37	12.04
1893	11.77	8.45	12.87	11.18
1894	9.75	8.67	11.38	11.06
1895	10.94	8.77	12.72	11.30
1896	10.39	9.96	12.14	11.96
1897	9.03	10.52	10.13	12.26
1898	9.18	10.82	10.33	12.24
1899	16.72	—	19.03	

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